BRIN's 2nd International Conference for the Health Research (ICHR 2024)

Strengthening Health Research and Innovation for Future Pandemic Preparedness

August, 28th - 29th , 2024

CONFERENCE PROGRAM BOOK

PREFACE

On behalf of the organizing committee, I cordially welcome you to the 2nd International Conference for Health Research (2nd ICHR). This distinguished event, scheduled for August 28th and 29th, 2024, will convene virtually via Zoom. Our primary objective is twofold: The first is to encourage the rigorous discussion and dissemination of innovative discoveries that originate from prestigious research institutes. Like valuable jewels, these discoveries can expand our knowledge of health and well-being. In addition, the ICHR acts as a hub for cooperation among nations. We aim to collectively improve global well-being by promoting relationships among states and institutions. Collaborative efforts allow us to create robust answers to the shared difficulties we confront, whether technological, epidemiological, or ethical.
Notably, the conference covers nine topics, including:

1. Biomedicine and health-related molecular biology
2. Zoonoses and One Health
3. Precision medicine and medical practice
4. Public health and nutrition
5. Pharmaceutical ingredients and natural products
6. Vaccine and drug development
7. Jamu and traditional medicine
8. Emerging and re-emerging diseases
9. Digital health

Our committee members' dedication, hard work, and support from the Research Organisation for Health at BRIN, Indonesia, have made this year's conference feasible. As of this year, the ICHR has maintained its track record of excellence. The conscientious efforts of all those engaged constitute a significant asset contributing to the conference's organization being much better. We thank them all for donating their time and resources to benefit our community. Finally, we thank the keynote speakers and presenters for their willingness to share their ideas and insights. Your presence here is greatly welcomed, and I look forward to the exciting discussion and fruitful collaborations that will follow this historic event.

Best regards,

Dr. A.B Naro Putra
General Chair of the Organizing Committee

THE COMMITTEE'S

BRIN's 2nd International Conference for the Health Research (ICHR 2024)
"Strengthening Health Research and Innovation for Future Pandemic Preparedness"

Steering Committee

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Head of Research Organization for Health - BRIN

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   Head of Research Center for Vaccine and Drug
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   Head of Research Center for Pre-clinical and Clinical Medicine
5. Dr. Wahyu Pudji Nugraheni, SKM, M.Kes
   Head of Research Center for Public Health and Nutrition
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7. Drh. Harimurti Nuradji, PhD
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Research Center for Pharmaceutical Ingredients and Traditional Medicine

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5. Muthia Dini Dewanti, SH
6. Denny Feriandika

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		3.	Nuralih, M.Farm
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		16.	Dr. drh. Fitrine E., M.Sc
		17.	Dr. drh. Uni P., M.Si
		18.	Dr. dra. Woro R., M.Kes

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TIME (WIB) / (UTC+07:00)	AGENDA							
08.00-08.30	Preparation & Registration							
08.30-08.40	National Anthem: Indonesia Raya							
08.40-09.00	Opening remarks **Prof. Dr. drh. NLP Indi Dharmayanti M.Si & Dr. Laksana Tri Handoko, M.Sc**							
	PLENARY SESSION DAY 1					**Moderator:** **dr. Monica Dwi Hartanti, M.Biomed, Ph.D**		
09.00-09.30	**Topic:** What happened in Indonesia during COVID-19 pandemics and what next? "a holistic insight"					**Keynote Speaker 1:** **Ir. Budi Gunadi Sadikin, CHFC., CLU***		
09.30-09.45	QnA Session 1							
09.45-10.15	**Topic:** Planning for the future by looking at the past: a brief history of pandemics					**Keynote Speaker 2:** **Aaron Neal, D. Phill**		
10.15-10.30	Q&A Session 2							
10.30-11.00	**Topic:** COVID-19 and potential future pandemics "study from global epidemiology perspective"					**Keynote Speaker 3:** **Prof. Dr. Dong-il AHN**		
11.00-11.30	**Topic:** Establishment of drug discovery platform against emerging viruses					**Keynote Speaker 4:** **Prof. Dr. Koichi Watashi**		
11.30-12.00	Q&A Session 3							
12.00-13.00	Break & preparation for breakout room							
13.00-13.20	**PARALLEL SESSION DAY 1**							
	Room 1	**Room 2**	**Room 3**	**Room 4**	**Room 5**	**Room 6**	**Room 7**	**Room 8**
	INVITED PARALLEL SPEAKER							
	Prof. Dr. drh. NLP. Indi Dharmayanti, M.Si Topic: Bats: Their role in emerging, and re-emerging diseases **"Live on Room 1"**		**Dr. Wahyu Pudji Nugraheni, S.K.M, M. Kes.** Topic: Financing and Investment Strategy to Support Sustainable Health Research and Innovation in Pandemic Preparedness **"Live on Room 3"**	**Prof. Dr. Elfahmi, S.Si, M.Si** Topic: Standardization in development of herbal medicines **"Live on Room 4"**		**Prof. Dr. Eng. Wisnu jatmiko, S.I., M.Kom** Topic: Digital health in modern era: case study in Indonesia **"Live on Room 6"**	**Prof. Dr. Muhammad Hanafi, M.Sc** Topic: The Potency of Indonesian natural product as for antiviral agents **"Live on Room 7"**	
13.20-13.30	Q&A Session		Q&A Session	Q&A Session		Q&A Session	Q&A Session	
13.30-16.00	**ORAL PRESENTATIONS**							
	Topic 1. Biomedicine and Health-related molecular Biology	**Topic 2.** Zoonosis and one health **Topic 3.** Precision medicine	**Topic 4.** Public health and Nutrition	**Topic 5.** Pharmaceutical ingredients	**Topic 6.** Vaccine and drugs **Topic 7.** Jamu and traditional medicine	**Topic 8 & 9** Emerging diseases and Digital health	**Topic 1.** Biomedicine and Health-related molecular Biology	**Topic 2, 4, other:** Zoonosis and one health;and other
16.00 - …	Closing day 1 directly from each room, & Information for day 2							

DAY 2 | Thursday, August 29th, 2024

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<tr><td></td><td colspan="8">INVITED PARALLEL SPEAKER</td></tr>
<tr><td></td><td colspan="2">dr. Harapan, DTM&H M. Infect Dis. PhD

Topic:
Molecular epidemiology and public health aspects of tropical diseases in Indonesia

“Live on Room 1”</td><td colspan="2">Prof. Dr. drh. Wayan T. Artama

Topic:
Zoonoses in Indonesia: Current update and Control strategies

“Live on Room 3”</td><td colspan="2">A’liyatur Rosyidah, M.Si, PhD

Topic:
Nanomedicine study in Indonesia

“Live on Room 5”</td><td colspan="2">dr. Anis Karuniawati, Sp. MK(K), Ph.D

Topic:
Recent AMR conditions in Indonesia

“Live on Room 7”</td></tr>
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Topic 3. Precision medicine and medical practice</td><td>Topic 4. Public health and Nutrition</td><td>Topic 5. Pharmaceutical ingredients</td><td>Topic 8 & 9 Emerging diseases and Digital health</td><td>Topic 1. Biomedicine and Health-related molecular Biology</td><td>Topic 2, 4, other: Zoonosis and one health; Public health and Nutrition, and other</td></tr>
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PROFILE OF
PLENARY KEYNOTE SPEAKERS

Ir. Budi Gunadi Sadikin, S.Si., CHFC., CLU.

POSITION	**:**	**Minister of Health Republic of Indonesia**
AFFILIATION	**:**	**Ministry of Health Republic of Indonesia**
EDUCATION	:	
2004	:	▪ Certification as a Chartered Financial Consultant (CHFC), Washington University ▪ Chartered Life Underwater, Singapore Insurance Institute
1988	:	Programme of Nuclear Physics, Bandung Institue of Technology
EXECUTIVE EDUCATION	:	
2012	:	Risk Management in Banking from INSEAD
2011	:	Interpersonal Dynamics for High-Performance Executives, Stanford Graduate School of Business
2010	:	Venture Capital Executive Program, University of California, Berkeley
2009	:	Global Strategic Management, Harvard Business School
2008	:	Strategic Thinking and Management for Competitive Advantage Program, Wharton University of Pennsylvania, Philadelphia
PROFESSIONAL EXPERIENCE	:	
2020 - present	:	Minister of Health Republic of Indonesia
2017 - 2019	:	Group Chief Executive Officer of Mining Industry Holding Company, PT. Indonesia Asahan Aluminium
2016 - 2017	:	Senior Advisor to the Minister of State-Owned Enterprises
2013 - 2016	:	President Director of Bank Mandiri

PROFILE OF
PLENARY KEYNOTE SPEAKERS

Aaron Neal, D. Phil

POSITION	**:**	**Global Health Research and Diplomacy of the National Institute of Allergy and Infectious Diseases (NIAID), U.S. National Institutes of Health (NIH)**
AFFILIATION	**:**	**U.S. National Institutes of Health (NIH)**
EDUCATION	:	
Post Doctoral		The National Institutes of Health
Doctor	:	Tropical Medicine, MRC Weatherall Institute of Molecular Medicine, University of Oxford
Bachelor	:	Molecular Biology, University of Alabama at Birmingham
AWARDS	:	NIH Oxford-Cambridge Scholars Program
PROFESSIONAL EXPERIENCE		▪ Embassy Science Fellow, U.S. Embassy Kuala Lumpur ▪ Indonesia Research Partnership Lead ▪ International Health Scientist ▪ Presidential Management Fellowship (PMF) appointment at NIAID ▪ Health Diplomat to Taiwan CDC in Taipei
RESEARCH EXPERTISE	:	Applied global health, malaria immunogenicity, molecular mechanisms underlying blood-stage pathogenesis and antimalarial drug resistance
SELECTED PUBLICATION	:	

Ahn D. Lessons from non-pharmaceutical interventions on the first wave of COVID-19 in the Asia Pacific region. J Glob Health Sci. 2021 Jun;3(1):e3. https://doi.org/10.35500/jghs.2021.3.e3

Wulan, Wahyu Nawang & Yunihastuti, Evy & Arlinda, Dona & Merati, Tuti & Wisaksana, Rudi & Lokida, Dewi & Grossman, Zehava & Huik, Kristi & Lau, Chuen-Yen & Susanto, Nugroho & Kosasih, Herman & Aman, Abu & Ang, Sunarto & Evalina, Rita & Gayatri, Anak Agung Ayu & Hayuningsih, Chakrawati & Indrati, Agnes & Kumalawati, July & Mutiawati, Vivi & Maldarelli, Frank. (2023). Development of a Multiassay Algorithm (MAA) to Identify Recent HIV Infection in Newly Diagnosed Individuals in Indonesia. iScience. 26. 107986. 10.1016/j.isci.2023.107986.

Arlinda, Dona & Susanto, N. & Alam, Anggraini & Somia, I.K.A. & Kumalawati, J. & Rusli, A. & Katu, S. & Sofro, M. & Rusli, Musofa & Subronto, Y. & Yennita, D. & Kembaren, Tambar & Hayuningsih, C. & Savitri, D. & Rosali, I. & Tanzil, F. & Gunawan, C. & Mutiawati, V. & Toruan, I. & Karyana, Muhammad. (2023). Hiv Viral Suppression Rate At Enrolment, Status At One Year, And Associated Factors To Non-Suppression Among Outpatient Adults At 19 Hospitals In Indonesia. International Journal of Infectious Diseases. 130. S126. 10.1016/j.ijid.2023.04.311.

PROFILE OF
PLENARY KEYNOTE SPEAKERS

Prof. Dr. Dong-Il Ahn

POSITION	**:**	**Visiting Professor of Yonsei University, School of Public Health**
AFFILIATION	**:**	**Yonsei University, School of Public Health**
RESEARCH EXPERTISE	:	Communicable and non- communicable disease, primary health care with health system development
Others		- Trained as a medical doctor in Korea, became a specialist for tuberculosis after which he had an experience of research fellow for lung diseases in Medical College of Virginia, US in 1988-1990 - Dr AHN joined World Health Organization (WHO) in 1995 and holds considerable expertise on public health areas. He started with commu nicable disease program and extended his experiences to maternal and child health, non-communicable diseases and primary health care systems development over 20 years. - He was aTeam leader of tuberculosis programme in WHO's Regional Office for the Western Pacific based in Philippines in his first 10 years in WHO. - He served as a WHO Representative in Laos, Pacific Islands Countri es, and Cambodia over the last 10 years until 2016. - He returned to Korea in 2016. His main research/lectures incudes emerging infectious diseases including COVID-19 pandemic and health system in developing countries. He has written series of Special report on COVID-19 pandemic issued by Global Care in Korea in 2020-2021 focusing global epidemiology and control policy on COVID-19 pandemic. - He has served as a Health Advisor in KOICA (Korea International Cooperation Agency) since 2018. He is also a member of Global Strategy Advisory Committee in Korea Disease Control and Prevention Agency since July 2023.
SELECTED PUBLICATION	:	

Ahn D. Lessons from non-pharmaceutical interventions on the first wave of COVID-19 in the Asia Pacific region. J Glob Health Sci. 2021 Jun;3(1):e3. https://doi.org/10.35500/jghs.2021.3.e3

PROFILE OF
PLENARY KEYNOTE SPEAKERS

Prof. Dr. Koichi Watashi

POSITION	:	▪ **Division Director of Drug Development, Research Center for Drug and Vaccine Development, National Institute of Infectious Diseases (NIID), Japan** ▪ **Visiting Professor, Tokyo University of Science** ▪ **Visiting Professor, Waseda University** ▪ **Adjunct Faculty Member, Nagoya University**
AFFILIATION	:	**National Institute of Infectious Diseases (NIID), Japan**
EDUCATION	:	
Doctor	:	Graduate School of Pharmaceutical Science, Kyoto University
Master	:	Graduate School of Pharmaceutical Science, Kyoto University
Bachelor	:	Faculty of Pharmaceutical Sciences, Kyoto University
AWARDS	:	
2017	:	MSD Award, The Japanese Society of Hepatology
2016	:	Taisho – Toyama Award
2012	:	Young Investigator Award, The Japan Society of Hepatology, STC
2007	:	Sugiura Memorial Incentive Award, The Japanese Society of Hepatology
2007	:	The Young Invetigator Award, The Japanese Society of Hepatology

SELECTED PUBLICATION :

Asami J, Park JH, Nomura Y, Kobayashi C, Mifune J, Ishimoto N, Uemura T, Liu K, Sato Y, Zhang Z, Muramatsu M, Wakita T, Drew D, Iwata S, Shimizu T, *Watashi K, *Park SY, *Nomura N, *Ohto U. Structural basis of hepatitis B virus receptor binding. Nat Struct Mol Biol 31(3):447-454 (2024) (*corresponding author)

Morino E, Mine S, Tomita N, Uemura Y, Shimizu Y, Saito S, Suzuki T, Okumura N, Iwasaki H, Terada J, Ainai A, Sakai Y, Park E, Seki S, Akazawa D, Shimojima M, Shiwa-Sudo N, Virhuez-Mendoza M, Miyauchi K, Moriyama S, Iwata-Yoshikawa N, Harada M, Harada S, Hishiki T, Kotaki R, Matsumura T, Miyamoto S, Kanno T, Isogawa M, Watashi K, Nagata N, Ebihara H, Takahashi Y, Maeda K, Matano T, Wakita T, Suzuki T, Sugiura W, Ohmagari N, Ujiie M. Mpox Neutralizing Antibody Response to LC16m8 Vaccine in Healthy Adults. NEJM Evid 3(3):EVIDoa2300290 (2024)

Akazawa D, Ohashi H, Hishiki T, Morita T, Iwanami S, Kim KS, Jeong YD, Park ES, Kataoka M, Shionoya K, Mifune J, Tsuchimoto K, Ojima S, Azam AH, Nakajima S, Park H, Yoshikawa T, Shimojima M, Kiga K, Iwami S, Maeda K, Suzuki T, Ebihara H, Takahashi Y, *Watashi K. Potential anti-mpox virus activity of atovaquone, mefloquine, and molnupiravir, and their potential use as treatments. J Infect Dis 228(5): 591-603 (2023)

PROFILE OF
PLENARY KEYNOTE SPEAKERS

Prof. Enoch Y. Park

POSITION	**:**	**Vice director of Research Institue of Green Science and Tecjnology, Shizuoka University**
AFFILIATION	**:**	**Research Institue of Green Science and Tecjnology, Shizuoka University**
EDUCATION	:	
Doctor	:	Department of Chemical Engineering, Institute of Applied Microbiology, University of Tokyo
Master	:	Department of Chemical Engineering, Korea Advanced Institute of Science and Technology (KAIST)
Bachelor	:	Department of Chemical Engineering, Han-Yang University.
AWARDS	:	
2023	:	The 60th Yomiuri Prize of Agricutural Science entitled “Research on protein production and virus detection by silkworm biofactory”, The Yomiuri Shimbun, Japan
2023	:	The 94th Japan Prize of Agricultural Science entitled “Research on protein production and virus detection by silkworm biofactory, Association of Japanese Agricultural Scientific Societies, Japan”
1995	:	TERUI award entitled “Strategies of the enhancement of biological and metabolic activity in microorganisms” in the society of Bioscience and Bioengineering, Japan
1994	:	Excellent academic paper award entitled “Kinetic study of hybridoma metabolism and antibody production in continuous culture using serum-free medium” in the society of Bioscience and Bioengineering, Japan
RESEARCH EXPERTISE	:	Gene expression, virus-like particle, silkworm biotechnology, bioprocess, nanobiotecnology, virus detection
RESEARCH PROJECT	:	
2023 - 2025	:	Bilateral Joint Research Projects (Grant No. JSPSBP120237704) between DST India and JSPS Japan: “Enzyme-assisted double consecutive amplified viral RNA detection”
SELECTED PUBLICATION	:	

Krishna Raja Muthuraman, Doddy Irawan Setyo Utomo, Mami Matsuda, Ryosuke Suzuki, Enoch Y. Park, Expression of dengue capsid-like particles in silkworm and display of envelope domain III of dengue virus serotype 2, Protein Expression and Purification, Volume 222, 2024, 106543, ISSN 1046-5928, https://doi.org/10.1016/j.pep.2024.106543.

Kato, T., Azegami, J., Kano, M. *et al.* Induction of Oxidative Stress in Sirtuin Gene-Disrupted *Ashbya gossypii* Mutants Overproducing Riboflavin. *Mol Biotechnol* **66**, 1144–1153 (2024). https://doi.org/10.1007/s12033-023-01012-6

Enoch Y. Park, Syuei Maehata, Indra Memdi Khoris et al. Signal-amplified surface-enhanced Raman scattering using core/shell satellite nanoparticles for norovirus detection, 24 June 2024, PREPRINT (Version 1) available at Research Square [https://doi.org/10.21203/rs.3.rs-4545656/v1]

PROFILE OF
PLENARY KEYNOTE SPEAKERS

Giovanni Cattoli, PhD

POSITION	**:**	**Health Director at th Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe)**
AFFILIATION	**:**	**Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe)**
EDUCATION	:	
Post Doctoral	:	▪ Faculty of Veterinary Medicine, Utrecht University, Netherlands ▪ School of Medicine, Free University, Amsterdam
Doctor	:	Vetrinary Medicine, University of Bologna, Italy
PROFESSIONAL EXPERIENCE	:	▪ Director of the Research and Innovation Department, Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe) ▪ Laboratory Head at the Animal Production and Health Laboratory, Joint FAO/IAEA (UN-International Atomic Energy Agency) Centre of Nuclear Techniques in Food and Agriculture (Austria) ▪ Senior scientist, OIE and FAO Reference Laboratory for Avian Influenza and Newcastle disease ▪ Senior scientist, OIE Collaborating Center for disease at the animal-human interface
RESEARCH EXPERTISE	:	Virology and influenza infection, development rapid and innovative diagnostic methods for veterinary infectious diseases and zoonoses, the development of novel vaccination strategies for avian influenza, molecular epidemiology of emerging and zoonotic pathogens in different animal species
SELECTED PUBLICATION	:	

Sendow, I., Meki, I.K., Dharmayanti, N.L.P.I. *et al.* Molecular characterization of recombinant LSDV isolates from 2022 outbreak in Indonesia through phylogenetic networks and whole-genome SNP-based analysis. *BMC Genomics* **25**, 240 (2024). https://doi.org/10.1186/s12864-024-10169-6

Berguido, Francisco J., Richard Thiga Kangethe, Wendy Shell, Viskam Wijewardana, Reingard Grabherr, Giovanni Cattoli, and Charles Euloge Lamien. 2024. "Different Neutralizing Antibody Responses of Heterologous Sera on Sheeppox and Lumpy Skin Disease Viruses" *Viruses* 16, no. 7: 1127. https://doi.org/10.3390/v16071127

Makalo MJR, Settypalli TBK, Meki IK, Bakhoum MT, Ahmed HO, Phalatsi MS, Ramatla T, Onyiche TE, Nionzima-Bohloa L, Metlin A, et al. Genetic Characterization of Lumpy Skin Disease Viruses Circulating in Lesotho Cattle. *Viruses*. 2024; 16(5):762. https://doi.org/10.3390/v16050762

PROFILE OF
PLENARY KEYNOTE SPEAKERS

Prof. Naruhiko Ishiwada

POSITION	**:**	**Professor, Department of Infectious Diseases, Medical Mycology Research Center, Chiba University, Chiba, Japan**
AFFILIATION	**:**	**Department of Infectious Diseases, Medical Mycology Research Center, Chiba University, Chiba, Japan**
EDUCATION	:	
Doctor	:	Research Assistant, Department of Pediatrics, Chiba University School of Medicine, Chiba, Japan
Master	:	M.D. cum laude, Graduated from Faculty of Medicine, Chiba University School of Medicine, Chiba, Japan
Bachelor	:	
AWARDS	:	
2018	:	63th Japanese Association for Infectious Diseases, Futaki Award
2015	:	4th Tooyama Chinkichi Memorial, Yamada Kazue Award
RESEARCH EXPERTISE	:	Pediatric Infectious disease, Vaccinology
SELECTED PUBLICATION	:	

Ishiwada N, Akaishi R, Kobayashi Y, Togo K, Yonemoto N, Matsuo M, Kaneko S, Law AW, Kamei K. Cost-Effectiveness Analysis of Maternal Respiratory Syncytial Virus Vaccine in Protecting Infants from RSV Infection in Japan. Infect Dis Ther. 2024 Jun 5.

Kusano T, Hoshino T, Ishiwada N. Large-scale questionnaire survey of parents and guardians on antimicrobial resistance using group health checkups for infants and toddlers in Japan. J Infect Chemother. 2023 Nov;29(11):1033-1037

Kobayashi J, Ohkusu M, Matsumoto T, Kubota N, Ishiwada N. Bacteriological and molecular characterization of temperature- and CO2-dependent Streptococcus pneumoniae serotype 24F ST162 isolated from Japanese children. Microbiol Spectr. 2023 Dec 12;11(6):e0216523.

PROFILE OF
PLENARY KEYNOTE SPEAKERS

Prof. Shaw-Fang Yet

POSITION	**:**	**Director of Institute of Cellular and Systen Medicine, National Health Research Institute, Zhunan, Miaoli County, Taiwan**
AFFILIATION	**:**	**Institute of Cellular and Systen Medicine, National Health Research Institute, Zhunan, Miaoli County, Taiwan**
EDUCATION	:	
Doctor	:	University of Houston, Texas, USA
Master	:	National Taiwan University, Taipei, Taiwan
Bachelor	:	National Taiwan University, Taipei, Taiwan
RESEARCH EXPERTISE	:	1) Oxidative stress-associated pathophysiology in cardiovascular system
		2) Phenotypic modulation of vascular smooth muscle cells in vascular disease
		3) Stem cell biology and regenerative medicine
SELECTED PUBLICATION	:	

Hamdin CD, Wu ML, Chen CM, Ho YC, Jiang WC, Gung PY, Ho HH, Chuang HC, Tan TH, Yet SF*. Dual-specificity phosphatase 6 deficiency attenuates arterial injury-induced intimal hyperplasia in mice. Int J Mol Sci. 2023;24(24):17136.

Chen CM, Gung PY, Ho YC, Hamdin CD, Yet SF*. Probucol treatment after traumatic brain injury activates BDNF/TrkB pathway, promotes neuroregeneration, and ameliorates functional deficits in mice. Br J Pharmacol. 2023;180(20):2605-2622.

Liao YC, Wei CY, Chang FP, Chou YT, Hsu SL, Chung CP, Mizuguchi T, Matsumoto N, Yet SF, Lee YC. NOTCH2NLC GGC repeat expansion in patients with vascular leukoencephalopathy. Stroke. 2023;54(5):1236-45.

PROFILE OF
PARALLEL KEYNOTE SPEAKERS

Prof. Dr. drh. NLP. Indi Dharmayanti, M.Si

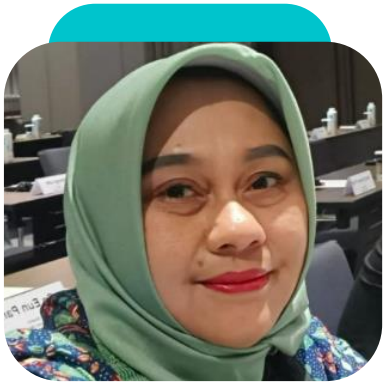
POSITION	**:**	**Head of Research Organization for Health, National Research and Innovation Agency (BRIN), Indonesia**
AFFILIATION	**:**	**National Research and Innovation Agency (BRIN), Indonesia**
EDUCATION	:	
Doctor	:	Biomedical Science, University of Indonesia, Indonesia
Master	:	Biotechnology, Gadjah Mada University, Indonesia
Bachelor	:	Veterinary medicine, Airlangga University, Indonesia
PROFESSIONAL EXPERIENCE	:	
2022 - present	:	Head of Research Organization for Health, National Research and Innovation Agency
2016	:	Director, the Indonesian Research Center for Veterinary Sciences
1999	:	Researcher of virology, the Indonesian Research Center for Veterinary Sciences
RESEARCH EXPERTISE	:	Virology, emerging zoonoses, and re-emerging diseases
SELECTED PUBLICATION	:	

Siti Irma Rahmawati, Dwi Wahyu Indriani, Febby Nurdiya Ningsih et al. Dual Anti-Inflammatory Activities of COX-2/5-LOX Driven by Kratom Alkaloid Extracts in Lipopolysaccharide-induced RAW 264.7 Cells, 25 June 2024, PREPRINT (Version 1) available at Research Square [https://doi.org/10.21203/rs.3.rs-4628929/v1]

Dominic Smith, Nyak Ilham, Riyandini Putri, Ermin Widjaja, Widagdo Sri Nugroho, Tarni Louisa Cooper, Harimurti Nuradji, Ni Luh Putu Indi Dharmayanti, Dianne Mayberry, Calculation of livestock biomass and value by province in Indonesia: Key information to support policymaking, Preventive Veterinary Medicine, Volume 226, 2024, 106164, ISSN 0167-5877, https://doi.org/10.1016/j.prevetmed.2024.106164.

Susanti S, Sudarmono PP, P Indi Dharmayanti NL, Astagiri Yusuf P. Production and characterization of immunoglobulin G anti-rLipL32 antibody as a biomarker for the diagnosis of leptospirosis. Vet World. 2024 Apr;17(4):871-879. doi: 10.14202/vetworld.2024.871-879. Epub 2024 Apr 19. PMID: 38798296; PMCID: PMC11111714.

PROFILE OF
PARALLEL KEYNOTE SPEAKERS



Dr. Wahyu Pudji Nugraheni, S.K.M, M. Kes.

POSITION	:	**Head of Research Center for Public Health and Nutrition, Research Organization for Health, National Research and Innovation Agency (BRIN), Indonesia**
AFFILIATION	:	**National Research and Innovation Agency (BRIN), Indonesia**
EDUCATION	:	
Doctor	:	Faculty of Public Health, Universitas Indonesia
Master	:	Faculty of Public Health, Universitas Indonesia
Bachelor	:	Faculty of Public Health, Airlangga University, Indonesia
PROFESSIONAL EXPERIENCE	:	▪ Senior Researcher at Health Research Organization, BRIN Indonesia ▪ Senior Reseacrher at Center of Health Policy, Community Empowerment and Humanity, National Institute of Health and Research Development, Ministry of Health Indonesia

SELECTED PUBLICATION :

Cost-effectiveness analysis of low-sodium potassium-rich salt substitutes in Indonesia: an equity modelling study Aminde, Leopold Ndemnge et al. The Lancet Regional Health - Southeast Asia, Volume 26, 100432. https://doi.org/10.1016/j.lansea.2024.100432.

Idris, H.; Nugraheni, W.P.; Rachmawati, T.; Kusnali, A.; Yulianti, A.; Purwatiningsih, Y.; Nuraini, S.; Susianti, N.; Faisal, D.R.; Arifin, H.; et al. How Is Telehealth Currently Being Utilized to Help in Hypertension Management within Primary Healthcare Settings? A Scoping Review. *Int. J. Environ. Res. Public Health* 2024, *21*, 90. https://doi.org/10.3390/ijerph21010090

Nugraheni Wahyu Pudji , Retnaningsih Ekowati , Mubasyiroh Rofingatul , Rachmawati Tety. Effects of the COVID-19 pandemic on cardiovascular disease financing in Indonesia (JKN claims data analysis 2019–2020). Frontiers in Public Health. Vol. 11, 2023. https://doi.org/10.3389/fpubh.2023.1148394.

Misnaniarti, Nugraheni Wahyu Pudji , Nantabah Zainul Khaqiqi , Restuningtyas Fraschiska Rizky , Hartono Risky Kusuma , Rachmawati Tety , Mubasyiroh Rofingatul , Kusnali Asep. Smoking behavior and hypertension among health workers during the COVID-19 pandemic: a case study in Java and Bali-Indonesia. Frontiers in Cardiovascular Medicine. Volume 10, 2023. https://doi.org/10.3389/fcvm.2023.1146859

PROFILE OF
PARALLEL KEYNOTE SPEAKERS

Prof. Dr. Elfahmi, S.Si, M.Si

POSITION	**:**	**Guru Besar Sekolah Farmasi, Institute Teknologi Bandung**
AFFILIATION	**:**	**Sekolah Farmasi, Institute Teknologi Bandung**
EDUCATION	:	
Doctor	:	Pharmaceutical Biology, University of Groningen, Belanda
Master	:	Sekolah Farmasi, Institute Teknologi Bandung
Bachelor	:	Fakultas Farmasi, Universitas Andalas
RESEARCH EXPERTISE	:	Medicinal plant biotechnology, pharmacognosy and phytochemistry, herbal medicines, natural based cosmetics
SELECTED PUBLICATION	:	

Nanda Putra, Afrillia Nuryanti Garmana, Nurinanda Prisky Qomaladewi, Amrianto, Laode M.R. Al Muqarrabun, Andi Rifki Rosandy, Agus Chahyadi, Muhamad Insanu, Elfahmi. Bioactivity-guided isolation of a bioactive compound with α-glucosidase inhibitory activity from the leaves extract of Sauropus androgynus. Sustainable Chemistry and Pharmacy. Volume 31. 2023. 100907. ISSN 2352-5541. https://doi.org/10.1016/j.scp.2022.100907.

Elfahmi, Hapsari RA, Chrysanthy T, Synthiarini V, Masduki FF, Setiawan A, Muranaka T. Expression of Two Key Enzymes of Artemisinin Biosynthesis FPS and ADS genes in *Saccharomyces cerevisiae*. Adv Pharm Bull. 2021 Jan;11(1):181-187. doi: 10.34172/apb.2021.019. Epub 2020 Nov 7. PMID: 33747865; PMCID: PMC7961222.

Elfahmi E, Cahyani FM, Kristianti T, Suhandono S. Transformation of Amorphadiene Synthase and Antisilencing P19 Genes into *Artemisia annua* L. and its Effect on Antimalarial Artemisinin Production. Adv Pharm Bull. 2020 Jul;10(3):464-471. doi: 10.34172/apb.2020.057. Epub 2020 May 11. PMID: 32665907; PMCID: PMC7335994.

Aini, P. N., Muhammad, D., Eko, P. G., Rachmat, M., & Fahmi, E. (2020). Formulation, Characterization and Antioxidant Myricetin Nanophytosome for Topical Delivery. *Asian Journal of Pharmaceutical Research and Development*, *8*(3), 9–13. https://doi.org/10.22270/ajprd.v8i3.718

PROFILE OF
PARALLEL KEYNOTE SPEAKERS

Prof. Dr. Eng. Wisnu Jatmiko, S.I., M.Kom

POSITION	:	▪ **Professor at the Faculty of Computer Science, University of Indonesia** ▪ **Head of Intelligent Robotics and System (IRoS) Laboratory, University of Indonesia** ▪ **Head of Artificial Intelligence Cluster Research, University of Indonesia**
AFFILIATION	:	**Faculty of Computer Science, University of Indonesia**
EDUCATION	:	
Doctor	:	Micro-Nano System Engineering, Nagoya University, Japan
Master	:	Faculty of Computer Science, University of Indonesia
Bachelor	:	Faculty of Engineering, University of Indonesia
AWARDS	:	
2020	:	An outstanding member recruitment and retention performance award, IEEE Center, USA
2020	:	Outstanding Section award for its achievements in the 'Reaching Locals' Project, IEEE Asia-Pacific Region
2019	:	An outstanding member recruitment and retention performance award, IEEE Center, USA
2017	:	Top 100 authors of Science and Technology Index
2015	:	107 Candidates for Innovation in Indonesia
2014	:	Asia Pacific ICT Research and Development Award
SELECTED PUBLICATION	:	

A. Haryono, G. Jati, and W. Jatmiko, Oriented object detection in satellite images using convolutional neural network based on ResNeXt, *ETRI Journal* 46 (2024), 307–322. DOI 10.4218/etrij.2022-0446.

Yunus, RE, Harris, S, Sidipratomo, P, Kekalih, A, Jatmiko, W, Pandelaki, J, Rachman, A, Syahrul, , Valindria, VV, Rachmadi, MF, Muzakki, MF, Tjuatja, A, Wijaya, AE, & Teresa, D. (2024). Stroke Prognostication in Patients Treated with Thrombolysis Using Random Forest. *The Open Neuroimaging Journal 17*(1): 1–12. https://doi.org/10.2174/0118744400298093240520070257

M. M. L. Ramadhan, G. Jati and W. Jatmiko, "Building Damage Assessment Using Feature Concatenated Siamese Neural Network," in IEEE Access, vol. 12, pp. 19100-19116, 2024, doi: 10.1109/ACCESS.2024.3361287.

PROFILE OF
PARALLEL KEYNOTE SPEAKERS

dr. Harapan, DTM&H M. Infect Dis. PhD

POSITION	**:**	**Assistant Professor**
AFFILIATION	**:**	**Universitas Syah Kuala, Indonesia**
EDUCATION	:	
Doctor	:	University of Western Australia, Australia
Post-graduate	:	Mahidol University, Thailand
Master	:	University of Western Australia, Australia
Bachelor	:	Universitas Syah Kuala, Indonesia
AWARDS	:	
2023	:	Outstanding Lecturer Award, Universitas Syiah Kuala
2023	:	Outstanding Researcher Diktiristek Award 2023 (SINTA Awards), Ministry of Education, Culture, Research and Technology
2023	:	Top 100 The Most Cited Scientist in Indonesia, Elsevier
SELECTED PUBLICATION	:	

Global, regional, and national burden of disorders affecting the nervous system, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. Lancet Neurology;23(4):344-381

Global, regional, and national age-specific progress towards the 2020 milestones of the WHO End TB Strategy: a systematic analysis for the Global Burden of Disease Study 2021. Lancet Infectious Diseases 2024; 10.1016/S1473-3099(24)00007-0 (In press)

Hemostatic and liver function parameters as COVID-19 severity markers. Narra J;4(1):178

PROFILE OF
PARALLEL KEYNOTE SPEAKERS

A'liyatur Rosyidah, M.Si, PhD

POSITION	:	**Researcher at Research Center for Vaccine and Drugs, Research Organization for Health, National Research and Innovation Agency (BRIN), Indonesia**
AFFILIATION	:	**National Research and Innovation Agency (BRIN), Indonesia**
EDUCATION	:	
Doctor	:	Biomedical Sciences, Suranaree University ofTechnology, Thailand
Master	:	Biology Sciences Department, Brawijaya University
Bachelor	:	Biology Sciences Department, Brawijaya University
AWARDS	:	
2024	:	Participant of the 15th HOPE Meeting with Nobel Laureates organized by Japan Society for the Promotion of Science (JSPS), Kyoto
2017	:	Grantee of SUT-PhD ASEAN Scholarship from Suranaree University of Technology, Thailand
2011	:	Grantee of Fast Track Scholarship for Master Study by Indonesian Ministry of Education, Indonesia
2010	:	Grantee of I-MHERE (Indonesia-Managing Higher Education for Relevance and Efficiency) Research Funding for student by Indonesian Ministry of Education, Indonesia
RESEARCH EXPERTISE	:	Nanomedicine, cell-based bioassay, microbiology
SELECTED PUBLICATION	:	

Susantoro, TM., Rosyidah, A., Suliantara. Setiawan, HL., Widarsono, B., Hadimuljono, JS. (2024). Identification of petroleum degrading bacteria and the status of oil pool in South of Minas Field, Central Sumatra Basin Indonesia. Egyptian Journal of Petroleum. 33 (2). https://doi.org/10.62593/2090-2468.1033

Yasawong, M., Rosyidah, A., Songngamsuk, T., Phatcharakarikarn, M., Ganta, P., Chantasena, P., Chudapongse, N., Santapan, N., Srisakvarangkool, W., Kerdtoob, S., Nantapong, N. (2024) First draft genome sequence data of TA4-1, the type strain of Gram-positive bacterium Streptomyces chiangmaiensis. Data in Brief. https://doi.org/10.1016/j.dib.2024.110611

Rosyidah, A., Pratiwi, RD., Muttaqien, SE., Rahmawati, SI., Bayu, A., Tan, SLJ., Gustini, N., Ahmadi, P., Putra, MY. (2024) A facile and simple synthesis of a cytotoxic tocotrienol-based nanoemulsion against MCF-7 and A549 cancer cell lines. Colloid and Polymer Science. https://doi.org/10.1007/s00396-024-05245-y

PROFILE OF
PARALLEL KEYNOTE SPEAKERS

dr. Anis Karuniawati, Sp. MK(K), PhD

POSITION	**:**	**Deputy Dean for Resources, Ventures, And General Administration of Faculty of Medicine, University of Indonesia**
AFFILIATION	**:**	**Faculty of Medicine, University of Indonesia**
EDUCATION	:	
Specialist	:	Clinical Microbiology Specialist, Indonesian Society for Clinical Microbiology
Doctor	:	Institut fuer Umwelt- und Tierhygiene sowie Tiermedizin und Tierklinik, Universitaet Hohenheim, Stuttgart, Jerman
Bachelor	:	Faculty of Medicine, University of Indonesia
PROFESSIONAL EXPERIENCE	:	
2018 - present	:	Deputy Dean for Resources, Ventures, And General Administration of Faculty of Medicine, University of Indonesia
2022 - present	:	Chairman of the Indonesian Association of Clinical Microbiology Specialists
RESEARCH EXPERTISE	:	Clinical microbiology
SELECTED PUBLICATION	:	

Antimicrobial resistance among common bacterial pathogens in Indonesia: a systematic review Gach, Michael W. et al. The Lancet Regional Health - Southeast Asia, Volume 26, 100414

Lestari, Delly Chipta, Pranee Somboonthum, Daisuke Motooka, Eiji Ishii, Shigeaki Matsuda, Anis Karuniawati, and Tetsuya Iida. 2024. "Clonality Analysis of *Streptococcus pneumoniae* in Clinical Specimens" *Microbiology Research* 15, no. 3: 1110-1118. https://doi.org/10.3390/microbiolres15030074

Evendi A, Karuniawati A, Ibrahim F, Asmarinah. Genetic and phenotypic of *Pseudomonas aeruginosa* sensitive to meropenem antibiotics after exposure to meropenem. Iran J Microbiol. 2024 Jun;16(3):299-305. doi: 10.18502/ijm.v16i3.15760. PMID: 39005611; PMCID: PMC11245351.

Shahab SN, Karuniawati A, Syarif OM, Saharman YR, Sinto R, Sudarmono PP. Multidrug-Resistant Bacteria Colonization in Patients Admitted to Dr. Cipto Mangunkusumo Hospital Jakarta, Indonesia. Acta Med Indones. 2024 Apr;56(2):191-198. PMID: 39010776.

PROFILE OF
PARALLEL KEYNOTE SPEAKERS

Prof. Dr. Muhammad Hanafi, M.Sc

POSITION	**:**	**Senior Researcher at Research Center for Pharmaceutical Ingredients and Traditional Medicine, Research Organization for Health, National Research and Innovation Agency (BRIN), Indonesia**
AFFILIATION	**:**	**National Research and Innovation Agency (BRIN), Indonesia**
EDUCATION	:	
Doctor	:	Natural Product Chemistry, Osaka City University, Osaka – Japan
Master	:	Natural Product Chemistry, Osaka City University, Osaka- Japan
Bachelor	:	Natural Product Chemistry, University of Indonesia
AWARDS	:	
2021	:	Habibie Prize for Expert Scientist in Basic Science
PATENT	:	14 certificates
RESEARCH EXPERTISE	:	Natural products of chemistry, medicinal chemistry
SELECTED PUBLICATION	:	

Gian Primahana, Puspa Dewi Narrij Lotulung, Teni Ernawati, Ida Rahmi Kurniasih, Andini Sundowo, Nina Artanti, Muhammad Hanafi; Cytotoxic activity of cinchona alkaloids cinnamate ester derivatives on MCF-7 cancer cell lines. *AIP Conf. Proc.* 18 July 2024; 3027 (1): 020010. https://doi.org/10.1063/5.0204820

Royani, A., Hanafi, M., Mubarak, N.M. *et al.* Unveiling green corrosion inhibitor of *Aloe vera* extracts for API 5L steel in seawater environment. *Sci Rep* **14**, 14085 (2024). https://doi.org/10.1038/s41598-024-64715-z

Royani, A., Hanafi, M., Mubarak, N.M. *et al.* Exploitation of *Azadirachta indica* extracts for multifunctional: antibacterial, anticorrosive, antioxidant activities, and its chemical constituents. *Int. J. Environ. Sci. Technol.* (2024). https://doi.org/10.1007/s13762-024-05717-2

Rosa, D., Elya, B., Hanafi, M. *et al.* Analysis of *Artabotrys hexapetalus* Stem Bark and Leaf Ethanol Extracts as α-Glucosidase Inhibitors: *In Vitro* Analysis, LC-MS/MS, Machine Learning, and Molecular Docking. *Rev. Bras. Farmacogn.* **34**, 386–396 (2024). https://doi.org/10.1007/s43450-023-00494-4

PROFILE OF
PARALLEL KEYNOTE SPEAKERS

Prof. Dr. drh. Wayan T. Artama

POSITION	:	▪ **Professor at Faculty of Veterinary Medicine, Gadjah Mada University (UGM), Indonesia** ▪ **Coordinator of One Health/EcoHealth Resource Center-UGM**
AFFILIATION	:	**Faculty of Veterinary Medicine, Gadjah Mada University, Indonesia**
EDUCATION	:	
Doctor	:	Institut fur Veterinar Biochemie, Freie Universitaet Berlin, Jerman
Bachelor	:	Faculty of Veterinary Medicine, Gadjah Mada University, Indonesia
AWARDS	:	British Counsil Research Awards
PROFESSIONAL EXPERIENCE	:	▪ Lecturer at Faculty of Veterinary Medicine, UGM ▪ Vice Dean for Academic Affairs, Research and Community Service at the Faculty of Veterinary Medicine, UGM
RESEARCH EXPERTISE	:	Molecular biology of parasities, molecular genetic, molecular diagnostic, one health and zoonotic diseases, zoonotic diseases and eids
SELECTED PUBLICATION	:	

Theresia Ika Purwantiningsih, Budi Prasetyo Widyobroto, Yustina Yuni Suranindyah, Wayan Tunas Artama, Antibacterial activity of faloak (Sterculia quadrifida) leaves extract , Biodiversitas Journal of Biological Diversity: Vol. 24 No. 12 (2023)

Michel de Garine-Wichatitsky, Animika Kritiyakan, Wayan Tunas Artama, Sowath Ly, Johan Michaux, et al.. One Health in practice: a socio-ecological approach for the study and management of zoonotic diseases associated with free-roaming dogs in Southeast Asia (SEAdogSEA). 3rd Joint AITVM–STVM International Conference, May 2024, Montpellier, France. , TROPICAL VETERINARY MEDICINE IN CHALLENGING TIMES: how should academic and research programs adapt?. ⟨hal-04637825⟩

Alek Ibrahim, Wayan Tunas Artama, I Gede Suparta Budisatria, Ridwan Yuniawan, Bayu Andri Atmoko, Rini Widayanti, Regression model analysis for prediction of body weight from body measurements in female Batur sheep of Banjarnegara District, Indonesia , Biodiversitas Journal of Biological Diversity: Vol. 22 No. 7 (2021)

PARALLEL SESSION SCHEDULE

DAY 1 | Wednesday, August 28th, 2024

TIME (WIB) / (UTC+07:00)	AGENDA							
	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
13.00-13.20	**INVITED PARALLEL SPEAKER**							
	Prof. Dr. drh. NLP. Indi Dharmayanti, M.Si Topic: The development of Influenza Vaccine for animals		**Dr. Wahyu Pudji Nugraheni, S.K.M, M. Kes.** Topic: Financing and Investment Strategy to Support Sustainable Health Research and Innovation in Pandemic Preparedness	**Prof. Dr. Elfahmi, S.Si, M.Si** Topic: Standardization in development of herbal medicines		**Prof. Dr. Eng. Wisnu jatmiko, S.I., M.Kom** Topic: Digital health in modern era: case study in Indonesia	**Prof. Dr. Muhammad Hanafi, M.Sc** Topic: The Potency of Indonesian natural product as for antiviral agents	
13.20-13.30	Q&A Session		Q&A Session	Q&A Session		Q&A Session	Q&A Session	
	ORAL PRESENTATIONS							
	Room 1	**Room 2**	**Room 3**	**Room 4**	**Room 5**	**Room 6**	**Room 7**	**Room 8**
	Moderator: **Dr. drh. Fitrine Ekawasti, M.Sc.**	Moderator: **Dr. Muthia Rahayu Iresha**	Moderator: **Bunga Astria Paramashanti, S.Gz., M.P.H., Ph.D**	Moderator: **Dr. Harto Widodo, S.P., M.Biotech.**	Moderator: **Dr.phil.nat. apt. Tri Yuliani, M.Biomed**	Moderator: **Dr. dr. Hasta Handayani Idrus, M.Kes.**	Moderator: **Yudhi Dwi Kurniawan, Ph.D**	Moderator: **Dr. Rose Malina Annuur**
13.30-13.40	The Antibiofilm Activity of Brown Algae Extracts Against Methicillin-resistant *Staphyloccocus aureus* (MRSA) and *Acinetobacter baumannii* **Novaria Sari Dewi Panjaitan**	The conversion of prion protein PrPC into the pathogenic isoform is dependent on central residue **Agriani Dini Pasiana, Hironori Miyata, Junji Chida, Hideyuki Hara, Morikazu Imamura, Ryuichiro Atarashi, and Suehiro Sakaguchi**	In vitro Evaluation of α-Glucosidase Inhibitory Activity of *Phyllanthus niruri L.* herbs Fractions and Prediction of Related Compounds **Idah Rosidah, Alfan Danny Arbianto, Firdayani, Nuralih, *et al***	Identification of Protection Gaps Against Anopheles Biting in Papua Province Through Malaria Risk Factor Assessment and Human Behavior Observation **Ismail Ekoprayitno Rozi**	Differentiation of Human Umbilical Cord Mesenchymal Stem Cells To Cardiomyocyte With 5-Azacytidine And Ascorbic Acid **Ariyani Noviantari, Elrade Rofaani, Radiana Dhewayani Antarianto, Mulyadi M. Djer**	Prevalence and risk factors associated with potential drug-drug interactions among hospitalized elderly patients **Shah Faisal**	Subchronic Toxicity of the Indonesian Natural Food Dyeing Agent Tectona grandis L.f.: Blood and Urine Parameters in Rats **Candra Dwipayana Hamdin**	Antioxidant Activity Test of Kaffir Lime and Kaffir Lime Peel Waste and Analysis of Total Phenolic Content **Laili Nailul muna, Enni Riyan Hasni, Farhatul Uyun**

TIME (WIB) / (UTC+07:00)	AGENDA							
	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
13.40-13.50	Exploring the Antibacterial Potential of Water Hyacinth (*Eichhornia* (Mart.) Solm) Against *Staphylococcus epidermis* and *Propionibacterium acnes*. **Amelia Febriani**	Anti-epileptogenic Potential of Topiramate, Pregabalin and Lacosamide Combination: Convergence on Brain Degeneracy and Oxidative Stress **Dr. Imran Imran**	Phytochemical Profiles, Antioxidant and Anticancer Activity from Leaves and Seed Extracts of *Myristica fragrans* **Ariyanti Saputri**	Molecular Response to Hypoxia in Umbilical Cord derived Mesenchymal Stem Cells (UCMSC) *Macaca fascicularis* **Ratih Rinendyaputri**	Identification The God Gene (VMAT2) in Indonesian Al-Qur'an-memorizer Students **Laifa A. Hendarmin**	The Impact of Ascorbic Acid Supplementation on D-Dimer Levels in COVID-19 Patients **Reza Aditya Digambiro**	The Effect of Stingless Bee Honey on Wound Size in Diabetic Rat Models **Nanang Miftah Fajari, Muhammad Darwin Prenggono, Mohammad Rudiansyah, *et al***	Characteristics of Communities Who Use Part of Medicinal Plants in Self Medication in Selong District, East Lombok. **Hurip Pratomo, Sudibyo Supardi, Agung Eru Wibowo, Suharmiati, Ani Isnawati, Faqih Dwi Kurniawan**
13.50-14.00	Characteristics of The Genotype of *Streptococcus mutans* Isolate from Early Childhood Caries In Banda Aceh **Suzanna Sungkar, Santi Chismirina**	Case Report of Candidemia by *Candida parapsilosis* in NICU at Prof. Ngoerah Hospital, Bali **Kurniawan, I Nyoman, Adnyana, Komang Putra, Iswari, Ida Sri, Hendrayana, Made Agus**	Phytochemical Screening and Bioactivity Assay of Methanol Extract of *Cassia fistula* L. of Bark **Lia Meilawati, Muhammad Hanafi, Nina Artanti, Megawati**	The Role of Angiotensin-Converting Enzyme (ACE) Insertion/Deletion Polymorphism in Brain-Derived Neurotrophic Factor (BDNF) Response to Eccentric Exercise **Intan Nur Febrianti**	Three Dimensional Spheroid Culture For Mesenchymal Stem Cell Effects Pdgf Protein **Widia Meliawati, Priskila Natasya Rambe Purba, Elrade Rofaani, Pungky Mulawardhana, Purwati, Ngurah Intan Wiratmini**	Integrated Single Cell-Based Bioinformatic Reveals Ribosomal Activity-Related Genes Signature of CD8+ T Cells Inform Patient Prognosis and Cellular Pathways Landscape in Human Papiloma Virus Positive (HPV^{pos}) Cervical Cancer **Bugi Ratno Budiarto**	Assessing the Potency of Bevacizumab and Sunitinib Malate in Combating Experimental Cerebral Malaria in Mice **Leily Trianty, Labibah Qotrunnada, Nur I. Margyaningsih, Aisah R. Amelia, et al.**	mySAKTI: A TMM Network Pharmacology Data Retrieval Methods for Formulation ID: MSS2515. F.02.02 **Muhammad Alif Basar, Farahidah Binti Mohamed, Muhamad Sadry Abu Seman, Mohd Affendi Bin Mohd Shafri**
14.00-14.10	Enhancing Osteogenesis: Collagen Coating on Titanium TNTZ Drives BMP2 and RUNX2 Signaling in WJ-MSCs **Hidayatul Fajri, Gunawarman, *et al.,***	Exploring the Immunological Landscape of Surrogate Mothers: Insights and Implication **Ece Aydın and Assoc. Prof. Dr. Furkan Ayaz**	Production Of Antibiotics Using Endophytic Mutant Bacteria From Leaves *Baccaurea motleyana* Mull. Arg **Rozana Zuhri**	The Bacterial Gene Diversity of Saliva in Indonesian Elderly Women Using 16S Ribosome Sequencing Oxford Nanopore Technology **Chris Adhiyanto, Laifa A. Hendarmin, Zeti Harriyati, *et al.,***	Circulating EPCs Profile Based On Maturation Phase: Hightlight Lifestyle Impact On Your Vascular State **Wiwit Nurwidyaningtyas**	Efficacy Of Bone Marrow Mesenchymal Stem Cell Therapy Against Hepatitis Virus Infection: Systematic Review **Inggit Dana Ayu Wilujeng, *et al.,***	Screening and Optimization Of Deep Eutectic Solvent Against Phylantin Compounds In Meniran Leaves (*Phyllanthus niruri* L.) **Yulianita, Zaldy Rusli and Anisa Fitriani**	Inventory of Usada Bali Medicinal Plants on Mount Pohen, Bedugul Highland Bali **Muhammad Hadi Saputra**

TIME (WIB) / (UTC+07:00)	AGENDA							
	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
14.10-14.20	Differences in Colonies From Isolates Of Pulmonary Tuberculosis Patients **Nastiti Intan Permata Sari, Fumito Maruyama**	Unmasking Stigma: An Exploration of Nurses in Urban and Rural Indonesia During the Covid-19 Pandemic **Yosi Marin Marpaung**	Production Optimization and Purification of Ligninolytic Enzymes from Indonesian White Rot Fungi for Cellulose Preparation **Eko Wahyu Putro**	APOA2 Polymorphism Orchestrates Lipid Profile in Healthy Adults: An Implication for Hypercholesterolemia and Cardiovascular Risk **Agung Junnata**	Formononetin, Ononin, Genistein Potential As PDL-1 Inhibitors In Hepatocellular Carcinoma: An In Silico Study **Nurul Hidayah**	Clinical Factors Affecting Dengue Fever (DF) And Dengue Haemorrhagic Fever (DHF) Diagnosis **Dicky Andiarsa**	In Silico And In Vitro Antibacterial Studies Of Citronella Esters For Oral Infection Diseases Treating **Galuh Widiyarti**	Influenza A and B Co-Infections In Early Covid-19 Patients: Preliminary Findings **Anna L Poetranto, Rima R Prasetya, Krisnoadi Rahardjo, *et al***
14.20-14.30	Detection of Etiology of Central Nervous System Infection by Multiplex Real-Time PCR Assay **Putu Yuliandari, Ni Made Adi Tarini, Ni Made Susilawathi**	Physico-chemichal properties of pigeon pea yogurt (Cajanus cajan L. Millsp) as functional food **Yuni Sine**	Profiling Antibiotic-Biosynthetic Genes and Screening Antibacterial Activity of Endophytic Bacteria Isolated from *Syzygium cumini* **Sakina Maya Maulawi, Jepri Agung Priyanto, Nisa Rachmania**	Alpha-Actinin-3 (ACTN3) Polymorphism partly influences BDNF Levels in Eccentric Exercise **Angela Excellcia Larasaty Susetyo**	Detection of Vitamin D Binding Protein Genes rs7041 and rs4588 in Subjects with Low Levels of 25 (OH)D Serum **Achmad Zaki, Chris Adhiyanto, Dianidya Kumandang Sari, Suryani, Andam Suli Yudhi Nugraha**	Nutritional Status Affects the Risk of Decubitus Ulcers in Elderly **Saldy Meirisandy**	Antibacterial Effects of *Cyperus Rotundus* Rhizome Extract *In Vitro* as An Alternative Treatment to Periodontitis **Cantika Prasna, Elza Ibrahim Auerkari, Almasyifa Herlingga Rahmasari Amin, *et al.***	Basic Reproduction Numbers Analysis in Tuberculosis Spread Model with Environmental and Habitual Influences **Yeni Rimadeni, and Dr. Muhammad Ikhwan**
14.30-14.40	The Role of Cytogenetic Tests in Differences in Sex Development Cases **Hannie Kartapradja, Denny Feriandika, Nanis Sacharina Marzuki**	The Profile of Urban Women with Positive Human Papillomavirus in Indonesian in 2016 **Sarwo Handayani**	The Different Potential Of Secondary Metabolite From *Peperomia pellucida* (L.) For Tuberculosis Drug With Bioinformatic Design **Sri Wahyuningsih**	Bioactive Compounds of *Spatholobus Littoralis Hassk* As Inhibition Of Egfr In Breast Cancer *In Silico* Study **Ois Nurcahyanti**	The Impact of Fitness, Lung Capacity, Well-being, And Energy Balance On Medical Students' Maximum VO_2 **Juwita Ninda Suherman, Taufiq Alfarizi**	Early Warning Alert and Response System in Lumajang, Indonesia; based on surveillance system attributes **Cicik Agustini Juwita, Anisa Maulida, Verdian Nendra Dimas Pratama, *et al.***	Antibacterial Potency of Liquorice (Clycyrrhiza Glabra L) Root Extract Againts Streptococcus Mutan and Streptococcus Sanguinis (In-Vitro) **Putri K. Zhara, Elza Ibrahim Auerkari, Roben Suhadi Pasaribu, *et al.***	Pyrethroid Susceptibility Status and Knockdown Resistance (kdr) Allele in Anopheles punctulatus Group in Keerom, Papua **Lepa Syahrani**

TIME (WIB) / (UTC+07:00)	AGENDA							
	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
14.40-14.50	Association Between Comorbidities and Severity of Patients with the SARS-CoV-2 Omicron Variant in Bengkulu City **Mardhatillah Sariyanti, Retno Wulan Seroja, Mulyadi, dr. Annelin Kurniati, Utari Hartati Suryani**	Exploring the Antibacterial Potential of Secondary Metabolite Extracts from *Aaptos* spp. **Niar Gusnaniar**	The Potency of Antibacterial and Antibiofilm Properties Derived from Soil *Streptomyces* spp. Against Bacterial Antibiotic Resistance **Muhammad Eka Prastya, Sumihartati Simbolon, Jepri Agung Priyanto, *et al.***	The Relationship of Comorbid Status With Ct Value Of RNA Dependent RNA Polymerase (Rdrp) And Severity Of Covid-19 Patients in RSUD Dr M Yunus, Bengkulu **Nikki Aldi Massardi, Auliya Afifah, Vernonia Yora Saki, Annelin Kurniati**	Curcumin and Turmeric Extract Inhibit SARS-CoV-2 Pseudovirus Cell Entry and Spike-Mediated Cell Fusion **Endah Puji Septisetyani**	How to set up a Pharmacovigilance System for a Government Hospital, Indonesia?: A Qualitative Study **Dewi Susanti Atmaja**	Antibacterial Potential of Ethanol Extract of Plectranthus Amboinicus (Lour.) Spreng Againts Streptococcus mutans Serotype C and Streptococcus Sanguinis **Devasya Nathania Kamilla, Elza Ibrahim Auerkari, Roben Suhadi Pasaribu, et al.**	Development and Fabrication of a Cost-Effective Vortex Mixer and Cooler for Biochemical Analysis **Agwin Fahmi Fahanani, Edwin Widodo, Dian Hasanah, *et al.***
14.50-15.00	mRNA Relative Expression Catalase and Glutathion Peroxidase in Hypertension **Yohana, Meiyanti, Monica Dwi Hartanti, Meutia Atika Farradilla, Karina Shasri Anastasya**	Antibacterial Activity of Cocoa Leaf Extract Gel Preparation (*Theobroma cacao* L.) Using Gelling Agent Na-CMC Against *Cutibacterium acnes* **Sartika**	The Potential Of *Uncaria gambir* As An Antifibrolitic Agent In Rat Liver **Sri Ningsih, *Erni* Hernawati Purwaningsih, Sri Widia A. Jusman, Wahono Sumaryono, Lamhot Parulian Manalu, Sjaikhurrizal El Muttaqien**	Clinical Profile and mRNA Expression in Saliva of Nasopharyngeal Cancer Patients as Potential Biomarkers **Anton Sony Wibowo**	Investigation of Natural Infection *Theileria* sp. in Cattle in Sleman Regency, Yogyakarta **Yudhi Ratna Nugraheni**	Pandemic Communication Solution: Deaf Mask for Deaf and Hard of Hearing (HoH) Disabilities **Nur Afni Aulia, Mutiara Titani, Habibah Alifatus Syaidah, Aulia Amanda, *et al***	Antihipercolesterolemia Activity Test Of Ethanol Extract *Musa paradisiaca var. Sapientum*. L PEEL ON *Mus musculus* **Sri Anggarini Rasyid, Sulfika Safira, Bai Athur Ridwan**	Drug-Drug Interactions In Elderly Patients In A Renal Ward: A Single-Center Retrospective Study In Pakistan **Nouman Ahmad, Shah Faisal, Syarifah Dewi, Vivian Soetikno**
15.00-15.10	Update On Monkeypox Epidemiology And Clinical Features: A Systematic Review **Reza Yuridian Purwoko, Telly Purnamasari, Anton Suryatma *et al.*,**	Antibacterial Activity of Endophytic Actinobacteria Associated with *Ziziphus* sp. against Multidrug-Resistant Bacteria **Hafifatunil Khairani, Jepri Agung Priyanto, Muhammad Eka Prastya**	Vernonia elaeagnifolia leaves extract revealed antioxidant and cytotoxic effect against 4T1 and MCF7 breast cancer cells **Febri Wulandari**	DRD4 Gene Variation, Depression and Anxiety Symptoms Among Pre-Clinical Medical School Students: A Preliminary Study **Auliyani Andam Suri, Chris Adhiyanto, Abdul Hadi Furqoni, et al.**	Synergism of *Bacillus thuringiensis israeliensis* and *Bacillus sphaericus2362* as Lymphatic Filariasis Vector Control to Overcome Mutation *Culex quinquefasciatus* **Rita Tjokropranoto**	Routine of Primary Care Visits, Medication Refills Adherence, and Blood Glucose Monitoring of Diabetes Mellitus **Agnes Christie Rinda**	Minimum Inhibitory Concentration and Minimum Bactericidal Concentration of Annona muricata ethanolic leaf extract on Porphyromonas gingivalis (ATCC 33277) and Streptococcus sanguinis (ATCC 10556) (In-vitro) **Indira Rezka Nur Alima, Elza Ibrahim Auerkari, et al.**	Pharmacological Analysis of Crescentia Cujete L Tea on Antidiabetic and Diuretic Effects in Rats **Teodhora, Amelia Febriani, Durroh**

TIME (WIB) / (UTC+07:00)	AGENDA							
	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
15.10-15.20	Unveiling the Facilitators and Barriers of Adopting Healthy Diets among Indonesian Teenagers during COVID-19 Pandemic **Visuddho Visuddho**	Enhancing Outpatient Diabetes Management: Digital Education Interventions for Effective Insulin Pen Use **Muhammad Thesa Ghozali, Bagas Dwi Nugroho**	Multi-epitope Vaccine Design for Triple Negative Breast Cancer from TOP2A and MUC1 Proteins: Immunoinformatic Approach **Rosario Trijuliamos Manalu, Zahir Thoriq, Lia Puspitasari**	An Evidence-Based Approach For The Generation Of Newcastle Disease Universal Vaccines **Ika Nurzijah**	In Vivo Assay of *Gigantochloa Apus* Shoot Extract as Biolarvicide for Myiasis-Causing Fly Larvae **Aqsa Aufa Syauqi Sadana, Muflihatul Muniroh, et al.**	Unveiling the Antibacterial Activity and Phytochemical Screening of Extracts and Various Fraction from *Spatholobus ferrugineus* **Erwi Putri Setyaningsih**	Ziziphus Mauritiana In Triple Negative Breast Cancer: Integrating Network Pharmacology And In Vitro Evaluation **Dian Yuliartha Lestari**	Antibacterial Activity of Facial Toner Containing Pepper Betle (*Peperomia pellucida*) Leaves Extract Against *Propionibacterium acnes* **Regia Desty Rakhmayanti**
15.20-15.30	Chemical Constituent And Anticancer Activities of *Aglaia Faveolata* Leaf Extract **Jamilah Abbas, Vera Permatasari ,Andini Sundowo, et al.**			An Efficient Multi-Label Deep Learning Approach for Precision Face Skin Condition Identification **Taufik Iqbal Ramdhani**	Phytochemical Screening and Extract Characterization of Jombang Leaf (*Taraxacum officinale*) Using Various Solvents **Vilya Syafriana**		Brine Shrimp Lethality Assay of Ethyl Cinnamates Synthesized By Microwave Irradiation Of Cinnamic Acids With Ethyl Acetate **Zetryana Puteri Tachrim**	Antibacterial Potential Evaluation of the Plant Collections from the Family of Rutaceae and Rosaceae in Cibodas Botanic Gardens, West Java, Indonesia **Intani Quarta Lailaty**
15.30-15.40	Exploring Kidney Histopathological Changes with Varied Cisplatin Dosages in an Experimental Animal Model: A Toxicological Analysis of an Antineoplastic Agent **Putri Reno Intan, Hidayatul Fajri, Sukmayati Alegantina, *et al.***				Antipyretic Evaluation of Combination of Annona muricata L. and Carica papaya L. in Mice **Amelia Febriani, Teodhora, Saiful Bahri, Fahrijal**			
15.40 – 16.00	Closing session directly at each room							

DAY 2 | Thursday, August 29th, 2024

TIME (WIB) / (UTC+07:00)	AGENDA							
	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
13.00-13.20	INVITED PARALLEL SPEAKER							
	dr. Harapan, DTM&H M. Infect Dis. PhD Topic: Molecular epidemiology and public health aspects of tropical diseases in Indonesia		**Prof. Dr. drh. Wayan T. Artama** Topic: Zoonoses in Indonesia: Current update and Control strategies		**A'liyatur Rosyidah, M.Si, PhD** Topic: Nanomedicine study in Indonesia		**dr. Anis Karuniawati, Sp. MK(K), Ph.D** Topic: Recent AMR conditions in Indonesia	
13.20-13.30	Q&A Session		Q&A Session		Q&A Session		Q&A Session	
	ORAL PRESENTATIONS							
	Room 1	**Room 2**	**Room 3**	**Room 4**	**Room 5**	**Room 6**	**Room 7**	**Room 8**
	Moderator: **Dr. Nastiti Intan Permata Sari, S.Si., M.Ked.Trop**	Moderator: **Dr. Sela Septima Mariya, S.Si.**	Moderator: **Dr. drh. Uni Purwaningsih, S.K.H., M.Si.**	Moderator: **Aan Kurniawan, S.Ant., M.P.H.**	Moderator: **Zetryana Puteri Tachrim, Ph.D.**	Moderator: **Andri Pramesyanti Pramono, S.Si., M.Biomed, Ph.D.**	Moderator: **Dr. dr. Sri Idaiani, Sp.KJ.**	Moderator: **Dr. dr. Armedy Ronny Hasugian, M.Biomed**
13.30-13.40	Elevated TSLP Expression in the Liver and Hepatocytes of Fatty Liver Disease **Jiro Hasegawa Situmorang**	Escherichia coli Produces ESBL which Collected from Equipment Chicken Traders in Traditional Market Banda Aceh **Baghiz Rizqullah Endha**	Phytochemical constituent and *in vitro* activities of different parts of Mengkudu (*Morinda citrifolia* L) **Muhammad Fikri Ash Shiddiqi, Yumareta Anggun Nihan, Andini Sundowo, Tia Oksalni, Rizna Triana Dewi**	The Role of APOA2–265 T > C Polymorphism in the Lipid Profile and Body Composition of Healthy Adults **Ilham Hizbulloh**	Computational One-health Studies of Fibrinogen-binding Protein A *Streptococcus agalactiae* Origin Fish and Human Clinical Case **Rifaldi Iqbal Yadiansyah**	Investigating The Relationship Between Diarrhea and Stunted Growth in Early Childhood **Ria Yudha Permata Ratmanasuci, Sri Handayani, Agus Made, Sylvester Chinbuah**	Phyllosphere Bacteria of Andaliman (Zanctoxylum acanthopodium DC) as Potential Antimicrobial Compounds Source against Pathogenic Bacteria and Fungi **Debie Rizqoh**	Introducing Herbs Among Young Indonesians Within a School Setting: Findings From a Qualitative Study **Aris Widayati, Bangunawati Rahajeng, Bandana Saini**
13.40-13.50	Comparative Genomics of SaGU1, a Bacteriophage that Infects *Staphylococcus aureus* Clinical Isolates **Ajeng Kusumaningtyas Pramono**	Damnacanthal and Nordamnacanthal, Two Antimicrobial Compounds from the Root Bark of *Rennellia speciosa* (Wall. Ex Kurz) Hook.f. **Dewi Wulansari**	Potential Selection Against a-Glucosidase Inhibitor of Robusta Coffee Extract by Metabolite Profiling and In Silico Study **Husniati Husniati, Muhammad Hanafi, Teni Ernawati, Berna Elya, Winni Nur Auli, Andi Rifki Rosandy, et al.**	Hemoglobin Subunit Beta Inconsequentially Correlates to Superoxide Dismutase 2 in Cervical Cancer Patients **Christopher Andrew Teguh**	The Distribution Analysis of Rabies-Transmitting Animal Bite Cases in Ambon City, Maluku Province 2020-2023 **Bertha Jean Que, Wendy Pelupessy, Jerome Constantine Lekatompessy**	The Association between Use of Hormonal Contraception and Hypertension in Women of Reproductive Age 15-49 Years in Indonesia: Data Analysis Riskesdas 2018 **Syeri Febriyanti**	Enhanced Mesenchymal Stem Cell Growth and Viability Using Liposomes from Argomulyo Soybean Extract **Reza Yuridian Purwoko, Lutfah Rif'ati, Chaidir Chaidir, *et al.***	DNA Amplification in Silver Ring Samples Using Locus FES And D18S51 Stored at Room Temperature **Abdul Hadi Furqoni, Sunarno, Chris Adhiyanto, Zeti Harriyati**

TIME (WIB) / (UTC+07:00)	AGENDA							
	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
13.50-14.00	The Relationship of Muscle Creatine Kinase (CK-MM) Levels with Brain-Derived Neuthrophic Factor (BDNF) in Men Aged 18-30 Years Given Eccentric Exercise **Masri Sembiring Maha**	Dihydroxy Benzoate Derivative Compound From Ethyl Acetate Extract of Stem Bark "Bawang hutan" (*Scorodocarpus borneensis* Becc.) As An antioxidant **Partomuan Simanjuntak, Lilik Sulastri, Siti Nujma Isnaeni, Rudi Kartika**	Potential Of Seahorse (*Hippocampus comes* L.) As A Candidate For Enhance Fertility **Trisnawati Mundijo, Yurnadi Hanafi Midoen, Franciscus D. Suyatna, Agung Eru Wibowo**	Induction of Neurogenesis and Glial Scar Formation in Brain Tissue of Ischemic Stroke Model **Aris Widayati**	Gastrointestinal Worms in Ruminants (Sheep, Goat and Cattle) **Indira Putri Negari, Bambang Hariono**	Economic Evaluation of Preventive Strategies during COVID-19 Pandemic: Scoping Review **Yeny Belawati**	Exploring the Bioactive Metabolites with Anti-Malarial Properties Derived from Endophytic Microbial Resources Indigenous to Indonesia **Elsera Br Tarigan, Erwahyuni Endang Prabandari, Danang Waluyo, *et al.***	Implementation of Biosecurity and the Zoonosis Cases on Duck Farming in Peri-Urban Area **Sutiastuti Wahyuwardani,Eny Martindah, Harimurti Nuradji, Ivan Mambaul Munir, *et al.***
14.00-14.10	Changes in S. *epidermidis* Biofilms During Transmission on Steel Surfaces **Niar Gusnaniar**	Antibacterial and Antimycobacterial Activities of *Fusarium Oxysporum* Fungal Extract Associated with *Myristica Fragrans* Houtt. Roots **Dwinna Rahmi**	Analysis of Respiratory Tract Microbiome In Hospitalized Covid-19 Patients **Rina Isnawati, Anna Lystia Poetranto, Nona Rahmaida Puetri, Setyo Adiningsih, Hana Apsari Pawestri**	Signaling through Toll-like Receptor 3 (TLR3) induced Interleukin-6 (IL-6) and Tumor Necrosis Factor-α (TNF-α) Expression in Nasopharyngeal Carcinoma **Siti Hamidatul Aliyah, Camelia Herdini, Sumartiningsih, *et al.***	Trend of Knowlesi Malaria Suspect in Aceh Province Since 2018-2023 (Aceh Provincial Health Service Data) **Nona Rahmaida Puetri**	Sex Transaction to Obtain Drugs among Female and Juvenile Prisoners In Papua **Mona Safitri Fatiah, Yane Tambing, Apriyana Irjayanti, Sarni Rante Allo Bela, Maxsi Irmanto ,Genoveva Chatleen Compehage Mollet, Evelyn Gyan Sirait**	Study of the Temperature and Molarity Ratio Effects in the Geraniol Esterification and Testing Its Antibacterial Activity **Stefanie Sugiarto, Novita Ariani, Elvina Dhiaful Iftitah, Galuh Widiyarti**	The Technique Analysis Quercetin and Ascorbic Acid Simultaneously In Tomatoes Using A Development Spectrophotometry UV **Muchlisyam, Lisda Rimayani Nasution, Mutiara B.G**
14.10-14.20	Genomic Analysis of the Temperate Phage vB_AbaM_ABMM1 and Expression of Phage-Derived Lysozyme to Inhibit Escherichia coli growth **Meity Mardiana, Nien-Tsung Lin**	Endophytic Fungus KpRi13-1 from Blak Turmeric (*Kaempferia parviflora*) : Antioxidant Activity, Species Identification, And Chemical Compound Content By LC-HRMS **Praptiwi**	An Emerging Problem Of Carbapenem Resistant In *Klebsiella Pneumoniae* Isolated In A Tertiary Hospital Denpasar **Velicia Irene Kesuma, Dwi Purnama Sari, James Setyadi Handono, *et al.***	The Association Between Virulence Genes and multi-resistant Sequence Type in Uropathogenic *Escherichia Coli* **Erike A. Suwarsono, Amin Soebandrio, Anis Karuniawati, Yeva Rosana, Nouval Shahab, Hadianti**	Exploring New Horizons: Endoscopic Innovations in Managing Cervical Tuberculous Spondylitis with Anterior Cervical Corpectomy and Fusion (E-ACCF) **Adam Moeljono**	Sinau Rempah Model For COVID-19 Prevention In Children **Ners Rosiana Eva Rayanti**	Traditional Medicine Products Used in Healthcare Facilities: An Overview **Aris Yulianto**	Multiplex Realtime PCR for Detection and Identification Fungal Meningitis **Sisca, Fitriana, Monica Dwi Hartanti, Sunarno, Dodi Safari, Anggraini Alam, Uni Gamayani**

TIME (WIB) / (UTC+07:00)	AGENDA							
	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
14.20-14.30	Investigation of the effects of hydrogen sulfide (H2S) inhibitor aminooxyacetic acid (AOAA) on the pathogenesis of chordoma **Melike Karakaya, Esra Aydemir**	Immunostimulant Activity of Formulae Extracts Contain Curcuma xanthorrhiza, Morinda citrifolia and Phyllantus niruri on Rat **Kurnia Agustini, Sri Ningsih, Susi Kusumaningrum, *et al.***	Environmental Pollution and Human Microbial Community: A Scoping Review on Indonesian Health Status **Syarif Hidayat, Juhairiyah, Ayunina Rizky Ferdina, Rani Sasmita, Putri Kartika Sari**	Transcriptional Regulation of CYP2D6 Expression and its Role in Breast Cancer **Ferbian Milas Siswanto, Maria Dara Novi Handayani, Lonah, Rita Dewi, *et al.***	Meta-analysis Comparing the Safety Profiles of Sodium-Glucose Transporter 2 Inhibitors and Sulfonylureas in Asia **Fonny Cokro, M.Farm-Klin, Rani Sauriasari, Dicky Levenus Tahapary, Heri Setiawan**	Evaluation of Anti-Osteoporotic Activity of Enzymatic Product of *Smallanthus sonchifolius* in Rat Model of Menopause **Tri Yuliani**	Antimicrobial and cytotoxic properties against MCF-7 breast cancer cell line of the methanolic extract of Dysoxylum parasiticum (Osbeck) Kosterm leaves **Debora E Ekawijaya, Kevin P Kusnadi, Sri Rahayu, Wawan Sujarwo, Tjandrawati Moze**	Correlation Between Cycle Threshold And Clinical Symptoms In Pediatric Covid-19 Patients: A Cross Sectional Study **Sabar Hutabarat**
14.30-14.40	Morfometric *Acerodon celebensis* and *Rousettus celebensis* and their Potensial Reservoar in South Sulawesi **Nur Rahma**	Distribution of Antimicrobial Resistant Genes in Primary Health Care Wastewater. **Rosantia Sarassari, Dewi Santosaningsih, Dewi Anggraini, et al.**	Tracking Duck Viral Hepatitis and Epidemiology of Other Waterfowl Diseases in West Kalimantan **Eny Martindah, Sutiastuti Wahyuwardani, Sri Suryatmiati Prihandani, et al.**	When Care Became A Choice: Citizens' Perspective in Doctor-Patient Relations On Telemedicine **Shilvi Khusna Dilla Agatta**	Digital Inclusion and Mental Health Resilience: Lesson Learned from Indonesian COVID-19 Pandemic **Nurina Hasanatuludhhiyah, Brihastami Sawitri, Beny Aji Ifaudi Rahman, et al**	Endophytic Bacteria Isolated from Temulawak Rhizome (*Curcuma xanthorriza*): Antibacterial Properties, And Isolation Of Active Fractions **Rayhan Helmyana Putra, Aika Latifah Alawiyah; Gian Primahana, *et al.***	IGF-1, Osteocalcin, and Alkaline Phosphatase Activity Blood Levels in Stunting Children from Buton, Southeast Sulawesi **Lio, Tiara Mayang Pratiwi**	Efficacy Test Of Anthrax Filtrate Vaccine In Guinea Pig and Evaluation Of Vaccination Results In Goats **Rahmat Setya Adji, Rina Dewiyanti, Ajeng Fabeane Putri, *et al.***
14.40-14.50	Acute Toxicity Evaluation of A Standardized *Morinda Citrifolia Fruit Extract* **Indah Dwiatmi Dewijanti, Rizna Triana Dewi, Marissa Angelina, Triyuliani, Sukirno, and Onisa Triwal Wafa**	Genome Analysis and Antibiotic Resistance Analysis of *Streptococcus pneumoniae* Prior Pneumococcal Vaccine Introduction in Indonesia **Dodi Safari, Yustinus Maladan, Rosantia Sarassari, et al**	The Influence of Exercise on Endothelial Function of Obesity **Nur. A. Salikunna, Irfan Idris**	Validation of a Simple PCR Self-Assembly With Three *Chamber* System **Tanto Budi Susilo, Tiara Elma, Irmawati, *et al.***	One-Pot Isothiocyanate Synthesis from Amines Using 4-Toluenesulfonyl Chloride in Water **Rose Malina Annuur**	*Prolong Waiting List of Hajj Pilgrims: What Needs to Be Clinically Prepared?* **Sayid Ridho, Asy'ari Muhammad Fahmi**	Exploring the Intersection of Biomedicine And Molecular Biology: Advances In Health-Related Research **Hasta Handayani Idrus**	Sociodemographic Analysis of Community Knowledge Levels about Antibiotics in Ciracas, East Jakarta **Ainun Wulandari, Teodhora, Ika Maruya Kusuma, Jenny Tungga Dewi**

TIME (WIB) / (UTC+07:00)	AGENDA							
	Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
14.50-15.00	Genetic Diversity in Zoonotic Malaria Transmission of Non-Human Primates and At-Risk Populations in Aceh, Central Kalimantan, and Southeast Sulawesi Provinces, Indonesia **Dendi Hadi Permana**	Umbilical Cord-Mesenchymal Stem Cell Cultures On Polycaprolactone Fiber Resulting A Stable Pdgf Protein **Priskila Natasya Rambe Purba, Widia Meliawati, Elrade Rofaani, Pungky Mulawardhana, Purwati, Okid Parama Astirin**	The Role of Antibiotics and Antivirals on Clinical Outcomes of COVID-19 Patients in Indonesia **Nadia Husna**	Characteristics and Dietary Patterns of Anemic Female Students of Universitas Muhammadiyah Jakarta, Class of 2021 **Lailan Safina Nasution**	Water, Sanitation And Hygiene (Wash) Interventions On Open Defecation Habit: Structural Equation Modeling (Sem) Approach **Wahyu Indah Dewi Aurora**			
15.00- 15.30	**Back to main zoom, and Closing ceremony**							

BRIN's 2nd International Conference for the Health Research (ICHR 2024)
"Strengthening Health Research and Innovation for Future Pandemic Preparedness"

ABSTRACTS

1. Biomedicine and health-related molecular biology
2. Zoonoses and One Health
3. Precision medicine and medical practice
4. Public health and nutrition
5. Pharmaceutical ingredients and natural products
6. Vaccine and drug development
7. Jamu and traditional medicine
8. Emerging and re-emerging diseases
9. Digital health

TRACK 1: Biomedicine and Health-related Molecular Biology

Paper ID : **ANP10001**
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Title : **The Antibiofilm Activity of Brown Algae Extracts Against Methicillin-resistant *Staphyloccocus aureus* (MRSA) and *Acinetobacter baumannii***

Abstract :

Biofilm formation by pathogenic bacteria such as Methycillin-resistant *Staphylococcus aureus* (MRSA) and *Acinetobacter baumannii* (*A. baumannii*) in installed medical equipment increases the risk of nosocomial infections which are often experienced by catheters installed in-patients. Many studies had proven the link between biofilm formation by infectious bacteria and nosocomial infections. Apart from that, bacterial biofilms are also closely related to increasing antibiotic resistance, which has long been a raised health issue worldwide. Many methods are used to create and seek replacement agents which can be used when antibiotic resistance occurs. One way is to rely on bioactive components from herbs (traditional medicine). The brown algae *Sargassum aquifolium* and *Padina australis* are example of marine biodiversity in Indonesia archipelagos, especially in Bali marine waters. However, its exploration and use in the field of health science is still very limited. Based on previous research, whole extract from brown algae had excellent inhibitory power against *Escherichia coli*. Seeing the global interest in the development of antibiotic resistance and the increasing number of cases of nosocomial infections caused by bacterial biofilms, our group aimed to explore and test the antibiofilm power of ethanol extracts *S. aquifolium* and *P. australis* against MRSA and *A. baumannii*. Using the method of measuring biofilm formation (visualization) and detecting mRNA expression of genes closely related to biofilm formation in each bacterium, the anti-biofilm ability of both brown algae extracts were tested. As preliminary data that will strengthen the development of the results of this research, the safety of brown algae extract for use in humans was also tested using cytotoxicity test on cultured Vero cells. The results of this research support the development of a preservative solution containing extracts (bioactive components) for use in medical devices, such as catheters in hospitals, to inhibit bacterial growth, biofilm formation and antibiotic resistance.

Keywords : Bacterial biofilms, MRSA, *Acinetobacter baumanii*, brown algae, anti-biofilm activity

Paper ID : **ANP10002**
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Title : **Detection of Etiology of Central Nervous System Infection by Multiplex Real-Time PCR Assay**

Abstract :

Prior antibiotic use and a lack of viral testing make an accurate underlying cause of a central nervous system (CNS) infection challenging, albeit crucial, in settings with limited resources. Our goal was to develop real-time multiplex PCR (RT-PCR) tests to identify frequent non-bacterial sources of CNS infection in Indonesia. We developed multiplex RT- PCRs for detection of herpes simplex virus (HSV) and varicella zoster virus (VZV). We tested cerebrospinal fluid (CSF) samples sent to the microbiology laboratory for culture from infant, children, adult, and geriatric patients presenting to a tertiary hospital in Bali from November 2020 to March 2021 with suspected CNS infection (meningitis, encephalitis) and no growth of general bacterial culture. A total of 30 patients with suspected CNS infection presented with fever, headache, seizure, altered mental consciousness, or cranial nerve palsy. Most of the patients are infants and children under 18 years old (70%) with a higher incidence in male (53%). From 30 CSF samples with no growth of general bacterial culture, no bacterial DNA (16s rRNA) was detected (0%) and HSV DNA was detected in only 1 sample (3%). Further study and more samples are needed to expand other causes of CNS infection, such as viruses, fungal, or parasites, especially in HIV-infected individual. Implementing these multiplex RT-PCR techniques in regular diagnostic testing could complement existing diagnostic methods and help reduce unnecessary antibiotic use and hospitalization.

Keywords : CNS infection, meningitis, real-time PCR

Paper ID : **ANP10003**
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Title : **Exploring Kidney Histopathological Changes with Varied Cisplatin Dosages in an Experimental Animal Model: A Toxicological Analysis of an Antineoplastic Agent**

Abstract :

Cisplatin (CP) is known for its nephrotoxicity and is commonly used as a model for inducing acute kidney injury (AKI) in animal studies. Previous research has predominantly focused on the immediate effects of CP-induced AKI, paying little attention to its potential transition to chronic kidney disease (CKD) with repeated administration. Our objective was to investigate the dosage-related effects of CP-induced nephrotoxicity by examining histopathological markers using both a single high dose and two lower doses administered at intervals in rats. Additionally, we aimed to explore whether these CP doses could lead to the development of CKD. Our study involved four groups: control group A, where rats were given a single intraperitoneal injection of normal saline on day 1. Group 2 received a single intraperitoneal injection of 14 mg/kg body weight on day 1. Group 3, known as control group B, received two intraperitoneal injections of normal saline, starting on day 1, spaced seven days apart. Group 4 received two intraperitoneal injections spaced seven days apart, each containing 2.8 mg/kg body weight on day 1. Control groups A and B received an equivalent volume of 10 mL/kg of saline. Histopathological assessments were performed on the kidneys of rats exposed to CP. Both dosage regimens resulted in dose-dependent changes in renal histopathology over time, including increased renal necrosis. Notably, the 2.8 mg/kg dose led to multiple episodes of AKI, progressing to CKD at low-dose repeated CP.

Keywords : acute kidney injury, chronic kidney disease, cisplatin, histopathological, nephrotoxicity

Paper ID : **ANP10005**
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Title : **Characteristics of The Genotype of *Streptococcus mutans* Isolate from Early Childhood Caries in Banda Aceh**

Abstract :

Background: One of the dental health problems in children is the high prevalence of Early Childhood Caries (ECC). Early childhood caries is mainly due to the habit of drinking milk or sweet drinks through bottles at night or prolonged breastfeeding. Early childhood caries has greater progression and causes damage to primary teeth, which can cause physical and mental health problems in children and increase the risk of caries in permanent teeth later. The purpose of this study was to examine the genotypic characteristics of *Streptococcus mutans* (*S. mutans*) isolates taken from various severity of ECC in children under 6 years of age in the city of Banda Aceh. Methods: *Streptococcus mutans* was isolated from saliva of children with caries-free status, mild-moderate ECC, moderate-severe ECC and severe ECC. The samples were cultured and the colonies were identified. Then Deoxyribonucleic acid (DNA) extraction and DNA amplification were carried out using *Polymerase Chain Reaction* (PCR), and analyzed. Result: Results of *PCR* shows, there were DNA bands in all samples. The tape shows the characteristics of DNA genotypes from *Streptococcus mutans* serotype c. These results indicate that there is no difference in the genotype of *Streptococcus mutans* in ECC with mild-moderate, moderate-severe, severe and free-caries.

Keywords : characteristics of genotype, S*treptococcus mutans*, early childhood caries, deoxyribonucleic acid

Paper ID : **ANP10006**

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Title : **Enhancing Osteogenesis: Collagen Coating on Titanium TNTZ Drives BMP2 and RUNX2 Signaling in WJ-MSCs**

Abstract :

Titanium TNTZ alloy (Ti29Nb13Ta4.6Zr) exhibits promising potential for orthopedic applications but requires treatment to enhance its bioactivity. One method used is coating with collagen to expedite the process of bone regeneration and healing. In this study, disk-shaped TNTZ material was coated with collagen through the immersion method. Surface characterization was performed using optical microscope and SEM (Scanning Electron Microscope), while biological response assessment was conducted on WJ-MSC (Wharton Jelly-Mesenchymal Stem Cells) through BMP2 and RUNX2 gene expression analysis that involved in osteogenesis signaling pathway. The percentage of calcified nodule formation on the cells, which is an indicator of mineralization, was calculated using Image Analysis. The results showed that collagen coating significantly upregulated the percentage of calcified nodule formation in WJ-MSC cells to 96.9% (p=0.0001). In addition, collagen coating also significantly upregulated BMP2 gene expression (p=0.000) but showed no significant difference for the RUNX2 gene (p=0.32). Regression analysis showed that BMP2 marker expression had a strong influence on osteocyte formation (53.4%), while the influence of the RUNX2 gene on osteocyte formation was weaker (31.6%). It can be concluded that collagen coating has a positive impact on the osteogenesis and mineralization process of WJ-MSC cells, making it a promising strategy in the development of orthopedic materials.

Keywords : titanium TNTZ, collagen, bioactivity, bone regeneration

Paper ID : **ANP10007**
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Title : **Differences in Colonies from Isolates Of Pulmonary Tuberculosis Patients**

Abstract :

Introduction: Tuberculosis is a bacterial infection caused by *Mycobacterium tuberculosis*, that primarily affects the lungs but can also affect other parts of the body. Culturing of this bacteria is essential for diagnosing active tuberculosis and determining drug susceptibility. **Objective:** the aim of this study is to confirm the presence bacterial infection from *Mycobacterium tuberculosis*. **Methods:** A total of 30 sputum samples from TB patients from Lombok, West Nusa Tenggara were cultured using Ogawa culture media. **Results:** The characteristics of *Mycobacterium tuberculosis* colonies are very distinctive, where yellow colonies appear on the medium with a small size and smooth texture. Of the 30 samples, only 5 isolates grew well in colonies and could be identified morphologically. The results of morphological identification showed that there was one isolate with a different colony appearance in terms of colony shape, colony texture and colony size. These results were confirmed by the patient's clinical data. All isolates that grew bacterial colonies were confirmed to have come from pulmonary tuberculosis patients with the same clinical symptoms. **Conclusion:** Based on the results of morphological identification, not all samples of tuberculosis sufferers have colonies of *Mycobacterium* bacteria, so confirmation is needed with a more specific and faster molecular identification method.

Keywords : colonies, isolates, pulmonary, tuberculosis

Paper ID : **ANP10008**
Author(s) : **Hannie Kartapradja*, Denny Feriandika, Nanis Sacharina Marzuki**
Affiliation(s) : Eijkman Research Center for Molecular Biology, Research Organization for Health, National Research and Innovation Agency
Title : **The Role of Cytogenetic Tests in Differences in Sex Development Cases**

Abstract :

Background: Human reproduction and function are highly complicated processes involving hormonal, enzymatic, genetic, and molecular factors. Deviations in this process cause conditions called differences in sex development (DSD). Molecular examination is essential in approaching DSD cases, and karyotyping is the first line in the diagnostic algorithm. Until now, only a few reports have been published of DSD cases confirmed through molecular analysis in Indonesia. This study aims to report the results of the cytogenetic examinations of two brothers with delayed development and DSD. **Case presentation:** The proband was the younger brother (eight months old), who was referred for confirmatory molecular evaluations due to the NIPT result being XXY and the post-natal karyotype 47,XX,+mar. The phenotype was male, so he was reared as a boy. We reexamined the karyotype and performed Fluorescence in Situ Hybridization (FISH), which revealed 47,XX,inv(Y)(p11.1q11.22),inv(7)(q11.23q22) and ish X(DXZ1x2,DYZ3x1)[300], respectively. Further analysis demonstrated the presence of the SRY gene in his genome. These results referred to Klinefelter syndrome, while the infant has had no significant complaints and signs. Out of parental interest, his brother (9 years old), who had experienced delayed speech and development, was asked for karyotyping, which resulted in 46,X,inv(Y)(p11.2q11.222). Despite being at distinct breakpoints, these two brothers share a similar pericentric Y chromosomal inversion resulting from the Yp and Yq breakpoints. The pericentric Y chromosome inversion suggests a familial condition passed down from the father, as the chromosomal defect was present in both of his sons. The proband had a chromosome 7 inversion that his sibling did not have. The defect was most likely acquired from a parent with a balanced translocation or a chromosome 7 inversion, and the implications of this structural defect are still unknown. Furthermore, the younger brother has an extra chromosome X, which is consistent with Klinefelter syndrome and was confirmed by FISH. One possible explanation for the additional chromosome X during cell division is nondisjunction during meiosis. **Conclusion:** The proband cytogenetic analysis referred to Klinefelter syndrome with Y chromosome inversion. The Y chromosome defect in these two brothers was most certainly transmitted paternally, whereas the chromosome 7 inversion is probably inherited from one of the parents. Detailed molecular analysis, including cytogenetic tests, namely karyotyping and FISH, is essential in diagnosing DSD cases and may contribute to providing more informative data in genetic counseling.

Keywords : DSD, chromosomal abnormalities, karyotyping, Klinefelter syndrome

Paper ID : **ANP10009**
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Affiliation(s) : Department of Microbiology and Immunology, Faculty of Medicine and Health Sciences, University of Bengkulu
Title : **Association Between Comorbidities and Severity of Patients with the SARS-CoV-2 Omicron Variant in Bengkulu City**

Abstract :

Background: *Severe Acute Respiratory Syndrome Coronavirus 2* (SARS-CoV-2) Omicron variant has a higher level of infectivity and transmissibility, around 2.8 and 3.2 times than Delta variant, but the pathogenicity of Omicron tends to be weaker. Some studies indicated that the comorbidities enhance the pathogenicity of SARS-CoV-2 infection with Omicron variant. This research aims to investigate the association between comorbidities and severity of patients with SARS-CoV-2 Omicron variant in Bengkulu City.
Method: This research was an observational study with a cross-sectional design. The subjects included positive coronavirus disease 2019 (COVID-19) patients confirmed by RT-PCR examination and the data were taken from medical record of three hospitals in Bengkulu City from January-December 2022. Several samples were identified of Omicron subvariant using the S-Gene Target Failure (SGTF) method. Therefore, the association between the type and number of comorbidities with COVID-19 severity were analyzed using Chi-Square and Spearman Rank correlation test.
Results: The research subjects consisted of 191 confirmed COVID-19 patients, with the majority were male (53.9% and were aged between 18-60 years (60.7%). Most subjects experienced cough (72.7%), fever (63.8%), malaise (52.8%), and shortness of breath (52.3%). The most common comorbidities were hypertension (21.3%), cardiovascular disease (20.6%), diabetes mellitus and chronic kidney disease each amounted to 15.4%. Overall, disease severity was observed in 58 patients as mild, 91 moderate, and 42 severe. There were significant correlations (p<0.05) between the seven types of comorbidities and the severity. Therefore, the number of comorbidities and severity had a significant correlation (p=0,000) with moderate correlation strength (r_s=0,572).
Conclusion: The comorbidities significantly influence the severity of illness among COVID-19 patients with SARS-CoV-2 Omicron variant. Thus, close monitoring of patients with comorbidities is needed as a strategy to prevent severe conditions.

Keywords: Comorbid, COVID-19, Omicron, SARS-CoV-2, Severity.

Paper ID : **ANP10010**
Author(s) : **Yohana, Meiyanti, Monica Dwi Hartanti, Meutia Atika Farradilla,Karina Shasri Anastasya**
Affiliation(s) : Faculty of Medicine Universitas Trisakti
Title : **mRNA Relative Expression Catalase and Glutathion Peroxidase in Hypertension**

Abstract :

Background: Hypertension is number one worldwide disease which lead to death by aging. Various factor determined by genes and life style. In the beginning, hypertension is caused remodelling of vascular wall. It is response by accumulation ROS (Reactive oxygen species) in varying amount. ROS was a result from unbalanced oxidant and antioxidant. When they are uncontrolled contribute to vascular damage. Different study showed increasing ROS and decreasing antioxidant enzyme could be another factor to vascular disease. Other ROS product from metabolism such as hydrogen peroxide. It caused by downregulation of their antioxidant gene expression. Both of antioxidant enzyme are catalase and glutathione peroxidase. They have role in modulation hydrogen peroxide become oxygen and water. Therefore, objective this study is to determine mRNA relative expression CAT and GPX in hypertension. Methods: In this cross-sectional study, sixty non-hypertensive dan hypertensive subject were recruited within the age of 50-60 years. Hypertensive subject was chosen according to JNC 8. Two millilitres vein blood was isolated into RNA. Catalase (CAT) and Gluthation peroxidase (GPX) mRNA expression was detected by RT PCR with 2 steps. Result: Catalase mRNA relative expression was lower in hypertensive compared to non-hypertensive subject (p=0,135). GPX mRNA relative expression was lower in hypertensive subject than non-hypertensive (p=0,165). Conclusion: Catalase and GPX mRNA relative expression was not significantly decrease in hypertension compared to those non-hypertensive subjects. Moreover, CAT and GPX mRNA expression have weaker correlation in hypertensive subjects.

Keywords : catalase, gluthation peroxidase, hypertension, expression

Paper ID : **ANP10011**
Author(s) : **Hasta Handayani Idrus**
Affiliation(s) : Biomedical Research Center, Research Organization for Health, National Research and Innovation Agency (BRIN) and Hasanuddin University Postgraduate School, Makassar, Indonesia
Title : **Exploring the Intersection of Biomedicine And Molecular Biology: Advances In Health-Related Research**

Abstract :

Biomedicine and health-related molecular biology have become a major focus of research in an effort to understand more deeply the biological basis of disease, diagnose medical conditions, and develop more effective therapies. Research in this field has resulted in significant advances in the understanding of mechanisms of disease pathogenesis, identification of biomarkers, and development of targeted drugs. This article summarizes recent developments in health-related biomedical and molecular biology research, including the use of new technologies such as genomics, proteomics, and gene therapy to formulate new strategies in the prevention, diagnosis, and treatment of disease. Additionally, we highlight the important role of bioinformatics in the analysis of molecular data and the integration of information obtained from multiple sources to support better clinical decision making. A better understanding of the biological complexity of disease and the body's response to therapy has opened the door to new breakthroughs in personalized medicine and treatments tailored to individual needs. As technologies and methodologies continue to develop, the prospects for health-related biomedical and molecular biology research are increasingly bright, with the potential to change healthcare paradigms and improve the quality of life for people globally.
Keywords : biomedicine, molecular biology, gene therapy

Paper ID : **ANP10012**
Author(s) : **Jiro Hasegawa Situmorang**
Affiliation(s) : Center for Biomedical Research, National Research and Innovation Agency (BRIN), Cibinong, Indonesia
Title : **Elevated TSLP Expression in the Liver and Hepatocytes of Fatty Liver Disease**

Abstract :

Thymic Stromal Lymphopoietin (TSLP), primarily known for its association with asthma pathophysiology and typically found in the skin, lungs, and gut, has recently gained attention for its potential protective role against obesity induced by high-fat diets in mice. This protection is shown to stem from increased fat secretion through the skin. Further analysis in human skin has revealed a positive correlation between sebaceous gland gene expression and TSLP gene expression. Our study aims to explore TSLP expression in liver tissue from individuals with fatty liver disease and in vitro models of fatty liver induced by palmitic and oleic acid. Utilizing human and hamster liver slices as well as clone9 cells, we employed immunofluorescence, western blot, and immunohistochemistry techniques to assess TSLP expression levels. Contrary to its typical absence in liver tissue under normal physiological conditions, our findings reveal an upregulation of TSLP in both fatty liver states and in response to exposure to palmitic and oleic acid. It is important to note that in the in vitro model, the expression of TSLP seems to be concentration-independent of palmitic acid and oleic acid. Nonetheless, our observations indicate a potential involvement of TSLP in the development or progression of fatty liver disease. However, further investigations are warranted to elucidate the exact role of TSLP in this context and its implications, whether protective or detrimental.

Keywords : TSLP, fatty liver, palmitic acid, oleic acid

Paper ID : **ANP10013**
Author(s) : **Ajeng Kusumaningtyas Pramono**
Affiliation(s) : National Research and Innovation Agency
Title : **Comparative Genomics of SaGU1, a Bacteriophage that Infects *Staphylococcus aureus* Clinical Isolates**

Abstract :

The bacterium *Staphylococcus aureus*, which colonizes healthy human skin, may cause diseases, such as atopic dermatitis (AD). Treatment for such AD cases involves antibiotic use; however, alternative treatments are needed owing to the development of antimicrobial resistance of *S. aureus*. This study aimed to compare the genome of the novel bacteriophage SaGU1, a potential agent for phage therapy to treat *S. aureus* infections, with its closest genomes in a public database. SaGU1 that infects *S. aureus* strains previously isolated from the skin of patients with AD was screened from sewage samples in Gifu, Japan. The SaGU1 genome was 140,909 bp with an average GC content of 30.2%. The genome contained 225 putative protein-coding genes and four tRNA genes, carrying neither toxic nor antibiotic resistance genes. Electron microscopy analysis revealed that SaGU1 is Myovirus. Genome comparison of SaGU1 and other genomically similar phages (n=50) showed that although the overall genome architecture is maintained, there are various genes that are uniquely present, most likely derived from bacteria, while others are not clear. Hence, our data suggest that the use of bacteriophage for therapy to treat AD caused by pathogenic *S. aureus* should be carefully monitored to make sure that there is no harmful gene in their genomes.

Keywords : phage therapy, bacteriophage, antimicrobial resistance

Paper ID : **ANP10015**
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Title : **The Relationship of Muscle Creatine Kinase (CK-MM) Levels with Brain-Derived Neuthrophic Factor (BDNF) in Men Aged 18-30 Years Given Eccentric Exercise**

Abstract :

Exercise-induced muscle damage is a muscle injury process that occurs in skeletal muscles after intense exercise or for individuals who are not used to exercising. Two biomarkers that appear during exercise-induced muscle damage and its recovery are muscle creatine kinase (CK-MM) and brain-derived neutrophic factor (BDNF). BDNF is a protein that plays an important role in the growth, development and maintenance of neurons (nerve cells) in the brain. BDNF is included in the group of neurotrophins, namely proteins that support the survival, differentiation and growth of neurons. BDNF can affect satellite cells, specialized cells around muscle fibers that are important in muscle repair and growth. This study explored the use of plasma BDNF as a less invasive biomarker of muscle regeneration and correlated it with CK-MM levels in men aged 18-30 years receiving eccentric training. An analytical observational study with a cross-sectional type was performed and applied in this study. Samples were blood plasma obtained from 60 male subjects aged 18-30 years. Samples were taken three times, namely pre, post, and 72 hours post eccentric exercise. Plasma concentrations of CK-MM and BDNF were analyzed using an ELISA kit and the reading was carried out using an ELISA reader. The median CK-MM level increased but there was no significant difference at Po-Ex ($p > 0.999$) and there was a significant difference at 72h-Po-Ex ($p < 0.05$). There was a non-significant decrease in BDNF levels at Po-Ex and 72h-Po-EX ($p > 0.999$). Based on the results of the correlation test, the r value obtained at three times Pr-Ex, Po-Ex, and 72h-Po-Ex was r = 0.5739, r = 0.3322 and r = 0.3682 respectively, which indicated that there was a moderate correlation with a positive direction between BDNF and CK-MM levels at three times. Plasma BDNF was predicted to have potential as a marker of recovery from muscle damage measured 72 hours after eccentric exercise.

Keywords : plasma BDNF, CK-MM, muscle injury, muscle recovery, eccentric exercise

Paper ID : **ANP10016**

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Title : **Changes in S. *epidermidis* Biofilms During Transmission on Steel Surfaces**

Abstract :

Bacteria can spread through transmission, which involves detachment from a donor and adhesion to receiver surfaces. This work compared the transmission of two strains of *Staphylococcus epidermidis*, one producing an extracellular polymeric substance (EPS) and the other not. We found that transmission occurred through cohesive failure in the biofilm, leaving the donor surface completely covered with biofilm. Interestingly, the thickness of the donor and receiver biofilms did not add up to the pre-transmission donor biofilm thickness, indicating a more compact biofilm after transmission, especially in non-EPS-producing staphylococci. The density of staphylococcal bacteria per unit biofilm volume increased from 0.20 to 0.52 μm^{-3} for the non-EPS-producing strain under high contact pressure. The EPS-producing strain remained relatively unchanged (0.17 μm^{-3}). This suggests that there are three phases in biofilm transmission: compression, separation, and relaxation of biofilm structure to its pre-transmission density in EPS-rich biofilms.

Keywords : *Staphylococcus epidermidis*, biofilm, biofilm viscoelasticity, optical coherence tomography

Paper ID : **ANP10017**
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Title : **Genomic Analysis of the Temperate Phage vB_AbaM_ABMM1 and Expression of Phage-Derived Lysozyme to Inhibit *Escherichia coli* growth**

Abstract :

Temperate bacteriophages, known as lysogenic phages, incorporate their genomes into the host bacterial DNA as prophages. This characteristic is generally viewed as disadvantageous for phage therapy, as lytic phages are preferred for their direct bactericidal actions. In this study, we isolated the temperate phage vB_AbaM_ABMM1 (ABMM1) from sewage water. ABMM1 possesses a circularly permuted double-stranded DNA genome with a length of 75,731 base pairs and a GC content of 37.3%, exhibiting a mosaic gene arrangement typical of temperate phages. The genome encodes 86 open reading frames (ORFs), including genes associated with lysogeny, but it lacks any genes related to virulence or antibiotic resistance. Comparative genomic analysis showed that ABMM1 has low similarity with other known phages and revealed that only a truncated form of ABMM1 prophage was detectable, showing genomic similarities with several *Acinetobacter baumannii* genomes. Despite its lysogenic nature, ABMM1 demonstrated effective reduction of bacterial infection in a zebrafish model when applied at a high multiplicity of infection (MOI). Additionally, the ABMM1-derived lysozyme, Gp73fl, was successfully cloned and expressed in Escherichia coli, where it significantly inhibited host growth. Further investigations are necessary to optimize Gp73fl purification for potential application in phage therapy, thus highlighting the potential of phage-derived proteins in combating infectious diseases.

Keywords : temperate phage, genomic analysis, phage-derived protein, lysozyme

Paper ID : **ANP10019**

Author(s) : **Melike Karakaya[1], Esra Aydemir[1*]**

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Title : **Investigation of the effects of hydrogen sulfide (H2S) inhibitor aminooxyacetic acid (AOAA) on the pathogenesis of chordoma**

Abstract :

Chordoma is an uncommon form of locally invasive, aggressive cancer with a dismal prognosis. Chordomas are typically found in axial skeletal regions such the sacrum, skull, and spinal cord. They are hypothesized to develop from remains of the notochord. Gaseous messenger molecules that are engaged in signaling are called gasotransmitters. One of the most notable and significant characteristics of gasotransmitters is their molecular processes, which allow them to chemically alter intracellular proteins and instantly alter cellular metabolism in order to deliver messages to their targets. As one of the gasotransmitters, hydrogen sulfide (H2S) is involved in many physiological and pathological processes. At low doses, it is believed to have cytoprotective properties. Through the use of L-cystine as a substrate, the enzymes cystathion-γ-lyase (CSE), cystathion-β-synthase (CBS), and 3-mercaptopyruvate sulfur transferase (3-MST) create H2S. This study looked into how chordoma was affected by aminooxyacetic acid (AOAA), a CBS-inhibitor.

For this reason, the vitality of MUG-Chor1 cells, their capacity for metastasis, and alterations in the genes involved in the apoptotic pathway (BCL2, BAK, and BAX) were examined, along with the possibility that death resulted from any changes in the expression of these genes. Our investigation revealed that the AOAA medication had no effect on vitality. The findings demonstrated that AOAA upregulates the BAK gene. The medication AOAA was shown to have no discernible effect on cell migration.

Keywords : chordoma, AOAA, H2S, pathogenesis

Paper ID : **ANP10020**

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[4]Division of Microbiology, Department of Infectious Diseases, Faculty of Medicine, University of Miyazaki, Kiyotake, Miyazaki, Japan

Title : **The conversion of prion protein PrPC into the pathogenic isoform is dependent on central residue**

Abstract :

The transformation of PrPC into PrPSc is crucial for prion disorders. Nevertheless, the transformation process remains to be comprehensively understood. Trangenic mouse PrP deletion amino acid residues 91-106(8545/Prnp0/0) were generated for this research. These mice display an upregulated expression of the murine PrP protein, which is devoid of amino acid residues 91-106. Based on the findings, it was observed that intracerebral administration of the 22L, FK-1, and RML prion strains did not induce any illness in the mice. Furthermore, with the exception of one mouse infected with the 22L strain, no accumulation of PrPScΔ91-106 was detected in their brains.
Moreover, after being exposed intracerebrally with BSE (Bovine Spongiform Encephalopathy) prions with PrPScΔ91-106, the animals exhibited symptoms of illness for approximately 85 days. These data demonstrate that the transformation of PrPC to PrPSc depends on residues 91-106 when infected with FK-1, 22L, and RML prions, but not in the presence of BSE prions. Afterward, we focused on residues 91-106, using cells infected with 22L and RML and inserting with various PrP deletional mutants, and found that the PrP mutants which missing residues 97-99 were unable transform into PrPSc within these cells. The in vitro transformation study demonstrated that FK-1, 22L, and RML prions were unable to convert PrP deletion amino acid residues 97-99 into PrPSc deletion amino acid residues 97-99. However, BSE prions were capable of doing so. Furthermore, PrP mutants charged residues at positions 97 and 99, or containing proline residues at positions 97 to 99, exhibited a significant reduction or full loss of their ability to transform into PrPSc in 22L and RML infected cells. As a conclusion, we show that the residues 97-99, which are structurally flexible and noncharged, may play a crucial role for the transformation of PrPC into PrPSc after infection with 22L, FK-1, and RML prions, excluding BSE prions.

Keywords : prion disease, prion strain, PrP conversion, neurodegenerative disease

Paper ID : **ANP10021**
Author(s) : **Dr. Imran Imran**
Affiliation(s) : Department of Pharmacology, Faculty of Pharmacy, Bahauddin Zakariya University, Multan 60800, Pakistan
Title : **Anti-epileptogenic Potential of Topiramate, Pregabalin and Lacosamide Combination: Convergence on Brain Degeneracy and Oxidative Stress**

Abstract :

Temporal lobe epilepsy is a common neurological disorder associated with comorbid psychiatric disturbances. The lithium-pilocarpine induced status epilepticus is a well-known etiological platform to reminiscence clinical focal epilepsy. In the current study we aimed to unravel the effects of antiseizures medication (ASM) topiramate as a monotherapy and in combination with pregabalin and lacosamide for 42 days on epileptiform discharges, altered brain oscillations, seizure chronicity, pathogenesis of comorbid emotional and cognitive dysfunction, redox homeostasis and neurodegeneration in adult Sprague Dawley rats. Outcomes illustrated that polytherapy prevented high voltage electrographic discharge synchronization, onset of SE, abnormal theta/delta ratio and desynchronize gamma activity. The drug therapy in TLE rats markedly halted epileptogenesis progression, seizures recurrence, weight loss and associated behavioral multimoridities such as anxiety-like behavior, cognitive impairments and depressive-like behavior assessed via an elaborate battery of neurobehavioral tests. Moreover combinatorial regime also reduced surge in the oxidative stress evidenced by reduced MDA and AchE levels and paradoxical increase in the activity levels of endogenous antioxidant enzymes i.e. SOD and GSH. Furthermore the ASMs cocktail suppressed neurodegeneration in limbic structures (CA1, CA3ab, CA3c, hilus and granular layer of dentate gyrus). Our findings provides supporting evidence in favor of polytherapy to treat network driven excitatory drive and epileptogenesis-mediated concomitant neuropathological disturbances.

Keywords : seizures, brain oscillations, neurobehavior, redox homeostasis, neurodegeneration

Paper ID : **AP11001**
Author(s) : **Sabar Hutabarat**
Affiliation(s) : Pediatric Departement, Faculty of Medicine Universitas Adiwangsa Jambi, Indonesia
Title : **Correlation Between Cycle Threshold and Clinical Symptoms In Pediatric Covid-19 Patients: A Cross Sectional Study**

Abstract :

The COVID-19 pandemic has affected individuals of all age groups, including children. Important to understanding the correlation between cycle threshold values and clinical symptoms in pediatric patients with COVID-19 is crucial for accurate diagnosis and management of the disease. This research aims to determine the correlation of Cycle Threshold (CT) Values with Clinical Symptoms Of Pediatric Patients With Covid 19. This research uses quantitative design with a cross sectional study approach. The population in this study was all children diagnosed with COVID-19 at hospitals in Jambi City in 2021. Sampling using total sampling technique. The data in this study was collected by looking at the medical records of children registered at Jambi City Hospital who were diagnosed with confirmed cases of COVID-19. Data analysis of this study used univariate and bivariate analysis . From the characteristics of respondents, it was found that the majority of respondents aged 11-18 years (58%) and male (58%). From the distribution of clinical symptoms, it was found that some receptors had milder symptoms (48%). From result this study shown clinical symptoms are significantly associated with low CT values in the study of COVID-19 pediatric patients (p = 0.000). The findings of this study underscore the importance of considering cycle threshold (CT) values in conjunction with clinical symptoms for the effective diagnosis and management of COVID-19 in pediatric patients. The significant correlation observed between clinical symptoms and low CT values suggests that a lower viral load may be indicative of more severe symptoms, providing valuable insight for healthcare practitioners. The predominance of adolescents among the study population highlights the vulnerability of this age group to COVID-19, emphasizing the need for targeted interventions and monitoring. However, further research is warranted to explore the specific mechanisms underlying this correlation and to validate the utility of CT values as a prognostic indicator for pediatric COVID-19 cases.

Keywords : cycle treshold, clinical symptoms, hygiene, pediatric, covid-19

Paper ID : **AP11003**

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Title : **Umbilical Cord-Mesenchymal Stem Cell Cultures on Polycaprolactone Fiber Resulting a Stable Pdgf Protein**

Abstract :

Umbilical cord, a waste tissue, is a potential source of a huge amount of mesenchymal stem cells, namely umbilical cord-mesenchymal stem cell (UC-MSC). It is generally isolated enzymatically by collagenase. In vivo, the cells are in three dimensional (3D) morphology and close to vascular endothelium. This 3D morphology allows cell-cell and cell-extracellular matrix interactions. The interactions provide a proper physiological environment, permitting the cells in maintaining their stemness, proliferation, and biochemical secretions such as platelet-derived growth factor (PDGF). To closely mimick the condition, fiber material is often used. The experiment was conducted firstly by characterizing the isolated UC-MSC by flowcytometry. The cells were cultured on aligned polycaprolactone (PCL) fiber for several days in serum-free medium. The PDGF concentration was measured by ELISA reader. Prior to fiber culture, the immunophenotyping characterization of the cells shows the surface markers of CD90 (86%), CD105 (99%), and CD73 (65%). Then, the cells cultured on aligned PCL fiber, resulting elongated cells along the morphology of fiber. The excess of cells forms a spheroid. Furthermore, the concentration of PDGF decreases in the culture system of two dimensional plate. In contrast, a stable PDGF content was found in 3D fiber culture. It indicates that PCL fiber allows cell to directly contact to material matrix. The matrix facilitates the cells in maintaining biochemical secretion.

Keywords : umbilical cord-mesenchymal stem cell, PCL fiber, elongated morphology, PDGF

Paper ID : **AP11004**

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Title : **DNA Amplification in Silver Ring Samples Using Locus FES And D18S51 Stored at Room Temperature**

Abstract :

The criminal behavior that occurs has various modes and specific motives. Likewise, criminals always try to hide or eliminate evidence at the crime scene. In most cases, police or forensic experts often find DNA on items at the crime scene. One of them is a ring, which is an item that is often worn by humans. This study used 18 silver ring samples that had been worn for 8 hours and incubated at room temperature. All samples were divided into 3 groups, each group consisting of 6 samples and incubated for 1, 5 and 10 days. DNA extraction using the DNAzol method and DNA quantification using a UV spectrophotometer. The average results of DNA quantification on day 1 were 621 ± 0104213, day 5 1152.444 ± 0.121572, day 10 1186.092 ± 0.082156. The PCR process uses STR primers with the FES and D18S51 loci and visualization uses the silver nitrate method. The final results showed that all samples could be amplified using 2 STR loci, namely FES and D18S51.

Keywords : STR, DNA, FES, D18S51, forensic

Paper ID : **AP11005**

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Title : **The Influence of Exercise on Endothelial Function of Obesity**

Abstract :

In 2022, one of eight people in the word were living with obesity. Obesity is a chronic disease defined by excessive fat deposits which can be harmful to health. Obesity can lead to increased risk of type 2 diabetes and heart disease. Obesity-related oxidative stress, the imbalance between pro-oxidants and antioxidants has been linked to endothelial function. exercise is one of the physical activities wich is popular in the people. Therefore, the aim of our study is review about the influence of exercise on endothelial function of human obesity. Literature was explored using Medline (PubMed) published between 2014 and 2024; randomized controlled trials and clinical trials with search strategy “endothelial function AND exercise AND obesity”. If the abstract and full paper have not discussed exercise about obesity and have not been related to endothelial function, then we have excluded them from this paper. Among 32 studies identified in the literature search, 17 articles were eligible for inclusion in this paper. Based on the literature reviewed, several types of physical exercise with various intensities can reduce body weight. exercise can also improve vascularization by improving blood vessel stiffness. Exercise in obesity can affect endothelial function which is known to reduce inflammatory markers. Therefore, exercise can be used as one of the programs for improving obesity.

Keywords : exercise, endothelial function, obesity

Paper ID : **AP11006**
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Title : **Three-Dimensional Spheroid Culture for Mesenchymal Stem Cell Effects Pdgf Protein**

Abstract :

Three-dimensional culture system provides a relevant physicochemical environment in vivo by facilitating cell–cell interaction. It overcomes the limitations of traditional 2D monolayer cell culture in terms of mimicking cell's morphology and physiology. Therefore, it is very essential to facilitate the properties of stemness, maintenance, and proliferation. Furthermore, mechanical stimulation such as dynamic is another in vivo physiological condition that allowing other biological activities such as platelet-derived growth factor (PDGF) enhances. In this experiment, we cultured umbilical cord-mesenchymal stem cells on 6-well plates that were placed in 45˚ degree tilted on orbital shaker and 0˚ degree tilted only. The results showed that the morphology of spheroid was formed on both conditions. However, the size of spheroid in dynamic culture is smaller and more homogenous in size and distribution than in static system. On day 3 and 6, while PDGF concentration decreases in static culture, it is found stable in dynamic system. The obtained value of PDGF content in orbital shaker on day 6 is higher. It indicates that three dimensional spheroid in dynamic culture system allows an increase of biochemical activity of cells by secreting PDGF. In addition, we maintained as well the cells in hanging drop culture in both conditions. The results showed that the number of cells and PDGF concentration is higher after 24 hours culture in static than in dynamic environment. However, on day 3, there is an increase of PDGF concentration in dynamic system.

Keywords : three-dimensional spheroid culture, mesenchymal stem cell, hanging drop, dynamic system, PDGF

Paper ID : **AP12001**
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Title : **Molecular Response to Hypoxia in Umbilical Cord derived Mesenchymal Stem Cells (UCMSC) *Macaca fascicularis***

Abstract :

BACKGROUND: Mesenchymal stem cells and their products, including the secretome, are likely to become therapeutic possibilities for regenerative medicine, particularly in degenerative disorders. Various attempts to create MSCs and secretomes in vitro have shown to be a major problem in achieving considerable product quality as therapeutic prospects. The primary factors in in vitro culture are the characteristics of the culture environment, including medium and temperature, as well as the supply of oxygen/O_2. Oxygen/O_2 supply is a critical driver of molecular signal responses at the cellular level in UCMSCs, including hypoxia-inducible factor 1-alpha/HIF-1α, which regulates a variety of proteins released by UCMSCs. Aside from that, Protein Kinase B/Akt, c-Jun N-terminal Kinase/JNK, Nuclear Factor kappa B/NFkB, and Extracellular Signal-Regulated Kinases 1 and 2/ERK1/2 are upstream of HIF-1α and will be activated during hypoxic circumstances. Changes in the expression of several genes can indicate enhanced protein production by UCMSCs that will be employed as therapeutic candidates. Although several research have looked at signalling in hypoxic preconditioning, none have been described in UCMSC M. fascicularis. This study sought to analyse gene expression in UCMSC M. fascicularis.
METHODS: Mesenchymal stem cells/MSCs were extracted from four M. fascicularis fetal umbilical cords. Culture was performed using the explant technique, and UCMSC were identified as marker MSC using flow cytometry and the capacity to develop into osteocytes, chondrocytes, and adipocytes before being used for therapy. The study will divide UCMSC into hypoxic, normoxic (without serum), and control (medium with FBS) groups. UCMSCs from three groups were analysed for ERK1/2, Akt, JNK, NFκB, and HIF-1alpha gene expression using RT-PCR.
RESULTS: RT-PCR study showed an increase in ERK1/2, Akt, NFκB, and HIF-1alpha but a decrease in JNK in UCMSC under hypoxic circumstances ($p>0.05$) using Kruskal-Wallis. Although there was no significant increase when compared to normoxia circumstances, there was a twofold rise in ERK1/2 and a threefold increase in HIF-1α compared to controls.
CONCLUSION: Umbilical cord-derived mesenchymal stem cell/UCMSCs preconditioned with hypoxia expressed more transcription factors and protein kinase than hypoxic circumstances. This gives critical information for the synthesis of MSCs and their derivatives, such as secretomes, as therapeutic candidates for regenerative treatment.

Keywords : hypoxia, umbilical cord derived mesenchymal stem cell/UCMSC, Hypoxia-Inducible Factor 1 alfa/HIF-1α, Akt/Protein Kinase B (PKB), molecular signaling

Paper ID : **AP12002**
Author(s) : **Intan Nur Febrianti**
Affiliation(s) : Faculty of Medicine, Universitas Trisakti, Jakarta, Indonesia
Title : **The Role of Angiotensin-Converting Enzyme (ACE) Insertion/Deletion Polymorphism in Brain-Derived Neurotrophic Factor (BDNF) Response to Eccentric Exercise**

Abstract :

Based on data from WHO globally, 28% of adults aged 18 years and older were not active enough in 2016. This makes people who are rarely active more susceptible to muscle injuries. Physiologically, muscle injury will be characterized by the presence of a neurotrophin factor, namely Brain-Derived Neurotrophic Factor. BDNF is a protein that plays an important role for neuroplasticity and exercise adaptation in muscle. The angiotensin-converting enzyme (ACE) gene contains a common insertion/deletion (I/D) polymorphism linked to cardiovascular function and athletic performance. Yet, its impact on BDNF response to eccentric exercise remains largely unexplored. This research aims to elucidate the association between ACE I/D polymorphism and BDNF levels following eccentric exercise. Participants with different ACE genotypes will undergo a course of eccentric exercise sessions, containing 3 sets of 15 reps biceps curls using 5 kg dumbbell. The plasma levels of BDNF were assessed before, after and 72 hours after exercise. Genotyping for ACE polymorphism was analyzed using polymerase chain reaction (PCR), while BDNF plasma levels were measured using enzyme-linked immunosorbent assay (ELISA). Statistical analyses were conducted using repeated measured one-way ANOVA and Mann-Whitney test to determine the difference of BDNF plasma levels between time points and ACE genotypes. Results showed a significant decrease in BDNF plasma levels across all participants throughout the assessment period (p=0,0399). However, no significant differences were observed in BDNF levels among the various ACE genotype groups before (p=0.1700), after (p=0.6999), and 72 hours after (p=0.8305) exercise. These findings suggest that while eccentric exercise leads to a decrease in BDNF levels, ACE I/D polymorphism does not appear to significantly modulate this response. Further research with larger sample sizes and longitudinal designs is needed to provide deeper understanding of the complex interplay between genetic factors, neurotrophic responses, and exercise-induced adaptations.

Keywords : muscle adaptation, angiotensin converting enzyme, brain-derived neurotrophic factor, ACE insertion, ACE deletion

Paper ID : **AP12003**
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Title : **The Bacterial Gene Diversity of Saliva in Indonesian Elderly Women Using 16S Ribosome Sequencing Oxford Nanopore Technology**

Abstract :

Microorganisms in the human mouth have a significant role in the health of the mouth and the body system as a whole. Identification of oral microbes can provide in-depth insight into microbial composition, as well as their potential contribution to oral health or disease. One method that has been proven effective in analyzing microbial diversity is 16S ribosomal RNA (16S rRNA) sequencing. We report the results of research on the genetic diversity of oral bacteria in elderly women using 16S rRNA third/fourth-generation sequencing Oxford Nanopore Technology techniques. Seven different saliva samples were analyzed using Epi2Me analysis for Lineages, and the results revealed a diversity of *Streptococcus* species. *Veillonella* genus is one of the bacteria that is often found in the human oral microbiota. The conclusion we can come up with is that we have taxonomically mapped the diversity of oral bacteria from 7 elderly women's saliva samples using the ONT 16s rRNA method. The genera Streptococcus and Veillonella were those frequently found in our saliva samples.

Keywords : 16S rRNA, Epi2Me, ONT, oral bacteria, human saliva

Paper ID : **AP12004**
Author(s) : **Agung Junnata**
Affiliation(s) : Faculty of Medicine, Universitas Trisakti, Jakarta, Indonesia
Title : **APOA2 Polymorphism Orchestrates Lipid Profile in Healthy Adults: An Implication for Hypercholesterolemia and Cardiovascular Risk**

Abstract :

Hypercholesterolemia, characterized by elevated plasma cholesterol levels and normal triglycerides, is often associated with an increased level of cholesterol and Apolipoprotein B, specifically low-density lipoprotein (LDL). The prevalence of hypercholesterolemia in Indonesia is reported at 35% according to the 2018 Riset Kesehatan Dasar (RISKESDAS). Apolipoprotein B100 (APOB100) plays a key role in lipid transport as the primary protein part of chylomicrons and LDL. Conversely, APOA2 (Apolipoprotein A2) is the second most abundant protein in high-density lipoproteins and may impede reverse cholesterol transport and the antioxidant function of HDL, potentially contributing to atherosclerosis development. The APOA2–265 T > C gene variant (rs5082), has been linked to alterations in APOA2 levels and lipid profiles and cardiovascular risk. However, the specific impact of APOA2 polymorphism on lipid levels and their ratios remains incompletely understood. This study aims to investigate the relationship between APOA2 polymorphism, APOA2 levels, APOB100 levels, and the APOB100/APOA2 ratio in healthy individuals. In this cross-sectional study, 84 healthy participants underwent genotyping for APOA2 polymorphism using a restriction fragment length polymorphism PCR (RFLP-PCR) method. Additionally, APOA2 and APOB100 plasma levels were quantified using Enzyme-Linked Immunosorbent Assay (ELISA). The APOB100/APOA2 ratio, recognized as a critical marker of lipid balance and cardiovascular risk, was calculated for each participant. Mann-Whitney test was used to statistically analyze the data using GraphPad prism version 9. Results revealed that APOA2 (Apolipoprotein A2) plasma levels was significantly lower in CT/CC genotypes of APOA2 gene compared to TT genotypes (P=0.0215). Furthermore, the ratio of APOB100 (Apolipoprotein B100) /APOA-2 (Apolipoprotein A2) was significantly lower in CT/CC genotypes compared to TT genotype (P=0.0020). However, no significant difference was observed on APOB100 plasma levels between APOA2 genetic variation. These results underscore the importance of considering genetic variations in APOA2 when assessing lipid profiles and cardiovascular risk. Further research using larger samples is warranted to validate these findings and elucidate the underlying mechanisms involved in APOA2-mediated lipid metabolism.

Keywords : APOA-II polymorphism, APOB100, hypercholesterolemia, CVD

Paper ID : **AP12005**
Author(s) : **Angela Excellcia Larasaty Susetyo**
Affiliation(s) : Faculty of Medicine, Universitas Trisakti, Jakarta, Indonesia
Title : **Alpha-Actinin-3 (ACTN3) Polymorphism partly influences BDNF Levels in Eccentric Exercise**

Abstract :

Eccentric exercise, characterized by muscle lengthening under load, is known to elicit various physiological responses, including alterations in BDNF levels, which plays a crucial role in neuroplasticity and exercise-induced adaptations. The ACTN3 gene encodes α-actinin-3, a protein predominantly expressed in fast-twitch muscle fibers associated with explosive muscle performance. The common R577X polymorphism in the ACTN3 gene has been linked to athletic performance, particularly in power-based activities. However, its influence on BDNF response to eccentric exercise remains unclear. This study aims to elucidate whether the ACTN3 R577X polymorphism modulates BDNF levels following eccentric exercise. A cohort of participants with diverse ACTN3 genotypes were undergo an eccentric exercise protocol, with BDNF levels assessed pre-, post- and 72 hours post- exercise. Restriction Fragment Length Polymorhpism PCR (RFLP-PCR) was used to determine the ACTN genotypes, whereas BNDF plasma levels were measured using ELISA methods. Kruskal Wallis Test was used to statistically analyze the data. Through the investigation, a significant difference in baseline BDNF levels based on ACTN3 genotypes was observed before exercise initiation ($p<0.05$). However, during the exercise protocol and up to 72 hours post-exercise, there was a decrease in BDNF levels across all ACTN3 genotypes (RR, RX, and XX groups). Interestingly, although BDNF levels decreased over time, there were no significant differences observed between time points in all genotypes with p values ranging from 0.1733 to 0.3416. These findings suggest that while ACTN3 genotype may influence baseline BDNF levels, it does not appear to significantly modulate the BDNF response to eccentric exercise. Further research with larger sample sizes and longitudinal study designs are needed to completely understand how the ACTN3 gene variation, BDNF levels, and changes in the body due to eccentric exercise are connected.

Keywords : BDNF, ACTN-3, eccentric exercises

Paper ID : **AP12006**
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Title : **Bioactive Compounds of *Spatholobus Littoralis Hassk* as Inhibition of Egfr In Breast Cancer *In Silico* Study**

Abstract :

Breast cancer is a significant health issue globally, in 2020, 68,858 new cases or about (16.7%) of the total 396,914 have been found in Indonesia. Current treatment strategies involve various methods such as surgery, radiotherapy, chemotherapy, and targeted therapy, but they often lead to severe side effects. Epidermal Growth Factor Receptor (EGFR) plays a crucial role in the development and progression of breast cancer. Some ligands that activate EGFR include epidermal growth factor (EGF), heparin-binding epidermal growth factor (HBEGF), amphiregulin (AREG), transforming growth factor α (TGF-α), and betacellulin (BTC). EGFR is activated upon binding with ligands, resulting in the activation of complex intracellular signaling pathways. This study aims to identify compounds from *Spatholobus Littoralis Hassk* that can inhibit EGFR activation, thereby impeding proliferation and tumor growth in breast cancer. The study was conducted *in silico* by searching for compounds from various literature sources. The EGFR protein was prepared as the target and the grid box was defined based on the native ligand. Docking simulations were performed using the test ligands and the EGFR protein. The resulting complexes were analyzed using ligplot. Glycyroside, Maackiain, and Procyanidins exhibited the lowest affinity scores of -8.7, -8.6, and -9.7, respectively, among the compounds found in *Spatholobus Littoralis Hassk*. This suggests that these compounds may inhibit EGFR activation, thus impeding proliferation and tumor growth in breast cancer.

Keywords : *Spatholobus littoralis* Hassk, EGFR, breast cancer, in silico

Paper ID : **AP12007**
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Title : **The Relationship of Comorbid Status With Ct Value Of RNA Dependent RNA Polymerase (Rdrp) And Severity Of Covid-19 Patients in RSUD Dr M Yunus, Bengkulu**

Abstract :

Coronavirus disease 2019 (covid-19) has been designated as a pandemic on March 11, 2020 by the World Health Organization (WHO). Based on the data compiled by the Covid-19 Task Force on October 13, 2020, of the covid-19 total confirmed cases, as many as 1,488 recorded patients have comorbid, the condition of comorbid aggravated covid-19, comorbid disease tends to cause more severe clinical results. The study aimed to find out how the status of comorbid relationship with the CT value of RNA-dependent and RNA polymerase (RDRP) covid-19 patients in RSUD Dr. M. Yunus Bengkulu, and to find out the status of the committed heretic with the degree of virility of the Covid-19 patients. The research design of this study was a cross-sectional design that used an observational analytic study using medical record data as a data source. Data collection of this research as the sample was collected from July to December 2020 and obtained 20 respondents who met the inclusion criteria. Sampling was carried out using a non-probability sampling technique with consecutive sampling types. Chi-Square test was used to analyze the relationship between Comorbid Status with CT Value of the RNA dependent RNA polymerase (RdRp) gene and the severity of Covid-19 patients. The results showed that there was no relationship between comorbid status and the CT value of the RNA-dependent RNA polymerase (RdRp) gene for COVID-19 patients in RSUD Dr. M. Yunus Bengkulu with the results of the Chi-Square test, obtained a value ($p = 0.319$) and there was no relationship between comorbid status and the severity of COVID-19 patients in RSUD Dr. M. Yunus Bengkulu, with a value ($p = 0.222$). Patients infected with Severe Acute Respiratory Syndrome-Coronavirus 2 (SARS-CoV 2) who had comorbidities did not find a significant relationship between the Ct value of the RNA-dependent RNA polymerase (RdRp) gene and the severity of COVID-19 patients in RSUD Dr. M. Yunus Bengkulu.

Keywords : COVID-19 pandemic, comorbid status, CT Value of RNA dependent RNA polymerase (RdRp) gene, severity

Paper ID : **AP12008**
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[3]Universitas Gadjah Mada Academic Hospital, Indonesia
Title : **Clinical Profile and mRNA Expression in Saliva of Nasopharyngeal Cancer Patients as Potential Biomarkers**

Abstract :

Background: Nasopharyngeal Carcinoma (NPC) is a malignant tumor originating from the epithelium of the nasopharynx. Nasopharyngeal carcinoma is the 4th most common cancer in Indonesia. Globally, approximately 133,354 cases and 80,008 deaths from NPC were estimated in 2020 corresponding to ASIRs and ASMRs of 1.5 and 0.9 per 100,000 person-years, respectively. Early detection is crucial in the management of NPC. Most patients present at an advanced stage. Tissue biopsy is the primary diagnostic method for NPC with some limitations. Molecules contained in body fluids (including saliva) contain molecules and compounds (including mRNA), which can be used for disease detection including NPC. **Objective:** To determine the clinical profile and mRNA expression in saliva of NPC and other head and neck cancer patients as potential biomarkers. **Methods:** This study is an observational analytical cross-sectional study to investigate the relationship between mRNA present in saliva and the occurrence of nasopharyngeal carcinoma, to be conducted at the Academic Hospital of Gadjah Mada University. **Results:** Nasopharyngeal carcinoma predominantly occurs in the productive age group and is more common in males. mRNA MYC, ICAM1, and PTEN can be isolated from the saliva of patients with nasopharyngeal carcinoma. The expression of mRNA MYC, ICAM1, and PTEN in the saliva of nasopharyngeal carcinoma patients is 1.117, 2.52, and 0.89 times higher respectively compared to controls. **Conclusion:** In patients with nasopharyngeal carcinoma, there is an increase in MYC and ICAM1 expression and a decrease in PTEN expression compared to normal individuals.

Keywords : nasopharyngeal carcinoma, mRNA, saliva, biomarker

Paper ID : **AP12009**
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Title : **DRD4 Gene Variation, Depression and Anxiety Symptoms Among Pre-Clinical Medical School Students: A Preliminary Study**

Abstract :

Medical students are grappling with depression and anxiety, attributed to factors like heavy coursework, demanding schedules, and social pressures. Recent research has identified several genes linked to neuropsychological traits, with a notable focus on the dopamine D4 receptor (DRD4) gene. The variability in the DRD4 gene, specifically the Dopamine receptor D4 (DRD4) exon III variable number tandem repeat (VNTR) polymorphism, has been linked to certain mental disorders. Our study investigated the VNTR DRD4 gene variations and mental disorder symptoms among pre-clinical medical students. We collected DNA samples from 35 students using whole blood and assessed the level of anxiety and depression symptoms using the DASS 21 questionnaire. The most prevalent genotype was 5/5 (23.5%), followed by 4/5 (17.6%), 4/4 (14.7%), and 4/6 (14.7%). Moderate to mild anxiety symptoms were predominantly found in the 4/4 and 4/7 genotypes, while severe to extremely severe anxiety symptoms were more common in the 4/6 and 5/5 genotypes. Mild to moderate depression symptoms were observed across genotypes 4/4, 4/6, 4/7, 5/5, and 6/6, whereas severe to extremely severe depression symptoms were solely present in 5/5 genotypes. Our findings serve as a foundational study on DRD4 gene variation and its correlation with mental health issues in Indonesia.

Keywords : medical students, depression, anxiety, DRD4, dopamine

Paper ID : **AP12011**
Author(s) : **Ilham Hizbulloh**
Affiliation(s) : Faculty of Medicine, Universitas Trisakti, Jakarta, Indonesia
Title : **The Role of APOA2–265 T > C Polymorphism in the Lipid Profile and Body Composition of Healthy Adults.**

Abstract :

Apolipoprotein A2 (APOA2) is a second major protein component of high-density lipoprotein (HDL) particles, playing a crucial role in lipid metabolism and transport. Genetic variations in the APOA2 gene, such as the APOA2–265 T > C polymorphism (rs5082), have earned attention due to their potential implications for cardiovascular health. Previous studies have suggested a link between APOA2 polymorphism and alterations in lipid profiles, particularly concerning low-density lipoprotein (LDL) and high-density lipoprotein (HDL) cholesterol levels. However, the effects of this genetic variation on various lipid parameters, body fat percentage, and BMI remain uncertain. The study aims to clarify these relationships through a cross-sectional analysis involving 84 healthy adults. Participants underwent genotyping for APOA2–265 T > C polymorphism using restriction fragment length polymorphism PCR (RFLP-PCR), with subsequent assessment of lipid profile parameters including APOA1, APOB100, APOB100/APOA1 ratio, cholesterol, LDL, HDL, and triglycerides. Additionally, body composition parameters such as body fat percentage and BMI were measured using Durnin/Womersley Caliper Method and ratio of weight and height methods, respectively. Statistical analyses of Mann Whitney test were used to analyse the potential associations between APOA2 polymorphism and the variables mentioned above. The levels of APOA1 plasma decreased in CT/CC group compared to TT groups. On the other hand, APOB100 plasma level increased in subjects with CT/CC genotype compared to subject with TT genotype. The ratio of APOB100/APOA1 increased in CT/CC genotype participants compared to TT group. However, no significant differences were observed in all variables, including other lipid parameters, body fat percentage and BMI, between APOA2 polymorphism. These findings suggest that APOA2 polymorphism may not play a significant role in determining lipid metabolism or body composition in healthy adults. Further research with larger sample sizes and longitudinal designs is warranted to confirm these results and explore potential alternative mechanisms.

Keywords : APOA2 polymorphism, lipid profile, body fat percentage, BMI

Paper ID : **AP12012**
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Affiliation(s) : Faculty of Medicine, Universitas Trisakti, Jakarta, Indonesia
Title : **Hemoglobin Subunit Beta Inconsequentially Correlates to Superoxide Dismutase 2 in Cervical Cancer Patients**

Abstract :

Oxidative stress contributes to the pathophysiology and progression of cervical cancer, the second major cause of worldwide female mortality after breast cancer. Superoxide dismutase 2 (SOD2), an endogenous antioxidant gene, plays a significant role in reducing oxidative stress in cervical cancer. Haemoglobin Subunit Beta (HBB), a gene that encodes the beta-globin subunits of haemoglobin, correlates to the level of oxidative stress in cervical cancer. This study investigated the correlation between the expression of HBB and SOD2 in cervical cancer patients. mRNA from 38 cervical cancer tissue biopsy samples were extracted and the gene expression levels was quantified using qRT-PCR. The data were analysed with The Kruskal Wallis and Spearman correlation tests. The expression level of HBB increased proportionally to disease progression ($p = 0.0354$), indicating the possible role of HBB in cervical cancer progression. An increasing pattern of SOD2 expression levels throughout the stadium of cervical cancer was observed, despite that, the difference is insignificant ($p = 0.0949$). The Spearman correlation test found $r = – 0.237$, $p = 0.170$, revealing a weak negative correlation between the expression of HBB and SOD2. This finding suggests that the two genes weakly influence each other's expression and implies HBB expression might be indirectly involved in oxidative stress-mediated cervical cancer progression. The possible role of HBB in cervical cancer needs to be investigated further, especially at the protein level.

Keywords : cervical cancer, HBB, SOD2, oxidative stress, endogenous antioxidants

Paper ID : **AP12014**
Author(s) : **Lio, Tiara Mayang Pratiwi**
Affiliation(s) : Doctoral Program in Biomedical Science, Faculty of Medicine, Universitas Indonesia, Jakarta, Indonesia
Title : **IGF-1, Osteocalcin, and Alkaline Phosphatase Activity Blood Levels in Stunting Children from Buton, Southeast Sulawesi**

Abstract :

Background: The average height growth of the Indonesian population is lower than the height growth of the population of neighboring countries such as Singapore and Malaysia. One of the factors causing low height growth is thought to be stunting. Short stature in stunted children can be caused by disruption of the bone formation process during growth, namely a decrease in osteoblast activity which can occur due to a decrease in growth hormones such as insulin-like growth factor 1 (IGF-1). This study aims to observe osteoblast cell activity through protein markers, osteocalcin (OC) and bone alkaline phosphatase (ALP) in stunting and normal children. Method: This research is an analytical observational case control study on 100 respondents, 47 of whom were stunted children and 53 normal children; aged 24-60 months. Examination of IGF-1 and OC levels in the blood plasma of stunted children was measured using the ELISA method, while ALP activity in blood plasma used the colorimetric method. The parameters were analyzed and compared between the stunting and normo stature children. Results: The median value of IGF-1 in stunting children is lower compared to normal children (2.38(0.89-59.29) ng/mL vs 5.12(0.85-48.33) ng/mL), but there is no correlation between IGF levels and stunting (p=0.07). ALP activity in stunting is lower than ALP activity in normal children (18 (10-671) U/L Vs 40 (10-613) U/L), and there is a significant correlation between ALP activity and the incidence of stunting (p = 0.003). Conclusion: In children with stunting, ALP activity and IGF-1 levels are lower than in children with normal stature. There is also a significant correlation between ALP activity and the incidence of stunting.

Keywords : stunting, normo stature, IGF-1, bone alkaline phosphatase, osteocalcin

Paper ID : **AP12015**

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Title : **Multiplex Realtime PCR for Detection and Identification Fungal Meningitis**

Abstract :

Fungal meningitis cases increase along with the increase in HIV/AIDs cases. Detection and identification of fungal meningitis is needed to determine appropriate therapy for patients. This research aims to develop a prototype PCR kit to detect fungi in samples and identify several species of fungi that cause meningitis. A total of 30 fungal and bacterial isolates were used to optimize the method and test the sensitivity and specificity of the examination. Three fungal isolates consisting of Cryptococcus neoformans, Candida albicans, and Aspergilus fumigatus were used as samples in the detection and identification of fungal species that cause meningitis. Meanwhile, 19 other fungal isolates were used as samples for fungal detection without species identification. A total of 9 bacterial isolates that cause meningitis and those that do not cause meningitis were used as negative control samples to test the specificity of the examination. The results of bioinformatic analysis showed that all PCR primers and probes were suitable for use in PCR reactions using multiplex and real-time approaches. The test results showed that C. neoformans, C. albicans, and A. fumigatus could be correctly identified using the PCR method developed in this study. Furthermore, all the other 19 fungal isolates could be detected using the developed PCR method. The research also showed that no detection errors occurred in all of the bacterial isolates used. The developed PCR can detect fungal isolates up to <10 CFU per reaction. Therefore, it is concluded that the prototype PCR kit developed in this study is suitable for detection and identification of fungi that cause meningitis and has good prospects for application to clinical samples.

Keywords : fungal meningitis, PCR, *C. neoformans, C. albicans, A. fumigatus*

Paper ID : **AP12016**
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Title : **Induction of Neurogenesis and Glial Scar Formation in Brain Tissue of Ischemic Stroke Model**

Abstract :

Background and purpose: Neurogenesis is one of factors improve clinical outcome in stroke patients, while glial scar formation is one of causes attenuation of recovery process after stroke. The brain-derived neurotrophic factor (BDNF) is a specific brain protein indicate neurogenesis process, and GFAP is a specific brain protein as marker for glial scar formation. The aim of this study was to observe expression level of BNDF and GFAP in brain tissue after ischemic stroke.
Methods: Twenty male Wistar rats were randomized to four groups. The first five rats were occlusion on left common carotid artery for 180 minutes then terminated (3 hours stroke group/group A).The second five rats were occlusion on left common carotid artery for 180 minutes and terminated on day 7 (7 days stroke group/group B). The third five rats were under anesthesia without occlusion on left common carotid artery and terminated on day 7 (control 7day group/ group C) and the last five rats were under anesthesia without occlusion on common carotid artery and terminated on 3 hour (control 3 hours group/D group). Examination of expression level of BDNF and GFAP on brain tissue used immunohistochemistry.
Results: Expression level of BDNF was found to decrease significantly in group A than group D, namely 5.20 ± 1.924 and 7.80 ± 1.304 respectively, p value 0.037. Expression level of BDNF was also found to decrease significantly in group B than group C, namely 5.00 ± 1.581 and 8.00 ± 2.00 respectively, p value 0.030. Expression level BDNF in group B was also found to decrease compare to group A, namely 5,00 ± 1,581 and 5,20 ± 1,924 respectively, p value 0.82. In other hand expression level of GFAP showed increase significantly in group A than group D, namely 9.60 ± 1.517 and 5.20 ± 1.483 respectively, p value 0.002. Expression level of GFAP was also found to increase significantly in group B than group C,11.40 ±2.074 and 5.60 ± 1.140 respectively, p value 0.001. Expression level of GFAP was also found to increase in group B than group A,11,40 ± 2,074 and 9,60 ± 1,517 respectively, p value 0.156.
Conclussions: Ischemic stroke induce upregulation GFAP since 3 hours after injury,but BDNF was decrease since 3 hours until 7 days after ischemic. That was indicate the possibility of glial scar formation was begun since 3 hours after injury but neurogenesis still did not occur until the 7th day after injury.

Keywords : Ischemic stroke, BDNF,GFAP

Paper ID : **AP12019**
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Title : **Signaling through Toll-like Receptor 3 (TLR3) induced Interleukin-6 (IL-6) and Tumor Necrosis Factor-α (TNF-α) Expression in Nasopharyngeal Carcinoma**

Abstract :

NPC may develop from chronic inflammation of the nasopharyngeal epithelium. Epstein-Barr Virus (EBV) encoded small RNA (EBER) participates in a vital role in chronic inflammation in the development of NPC by activating the Toll-like receptor 3 (TLR3) signaling pathway. TLR3 is a type-I transmembrane protein that detects pathogens and triggers an inflammatory response, specifically interacting with double-stranded RNA (dsRNA) derived from viruses. This study investigates the correlation between TLR3 expression with pro-inflammatory cytokines (TNFα, IL-6) and clinicopathology parameters (clinical stage, tumor size, lymphatic node involvement, and metastasis). A total of 23 nasopharyngeal brush (np-brush) samples were collected prospectively from April 2019 to February 2020 from a patient with NPC. The np-brush mRNA level of TLR3, IL-6, and TNF-α was measured using qRT-PCR with GAPDH as an internal control. The relationship of TLR3, IL-6, and TNF-α was tested with Spearman's correlation ($p<0.1$). The relationship between TLR3, IL-6, and TNF-α with clinical stage, tumor size, node involvement, and metastasis was tested by Spearman's correlation, $p<0.1$. TLR3 mRNA has positive correlation with IL-6 ($r=0.438$, $p=0.018$) and TNF-α ($r=0.546$, $p=0.004$). The level of mRNA TLR3, IL-6 and TNF-α were correlated to tumor size ($r= 0.522$ $p= 0.005$ for TLR3, $r=0.221$ $p= 0.155$ for IL-6 and $r= 363$ $p=0.044$ for TNF-α). TLR3 mRNA also correlated with clinical stage ($r= 0.110$ $p= 0.309$) but did not correlate with lymphatic node involvement and metastasis. The mRNA level of TLR3 had a positive correlation with IL-6 and TNF-α. TLR 3 signaling induces TNF-alpha and IL-6, contributing to worse outcomes (tumor size and clinical stage) in NPC patients. For further study, looking at the correlation between EBERs and TLR to induce chronic inflammation in NPC is necessary.

Keywords : NPC, Chronic inflammation, TLR3, IL-6, and TNF-α

Paper ID : **AP12020**
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Title : **The Association Between Virulence Genes and multi-resistant Sequence Type in Uropathogenic *Escherichia coli***

Abstract :

Urophatogenic *Escherichia coli* Sequence type-131 (UPEC ST-131) is one of the bacteria that causes urinary tract infections with multi-resistant and virulent phenotypes. UPEC ST-131 usually detected as Extended Spectrum of Beta-lactamase (ESBL). Some preliminary research examines the possible relationship between virulence genes and resistance patterns. This study aims to assess the relationship between virulence genes and UPEC ST-131. Study samples were obtained from the urine of suspected as community urinary tract infections. The urine was inoculated on sheep blood and mac Conkey agar, thus incubated for 24 hours. Identification of growing colonies using VITEX2. Detection of *cnf-1* and *hlyA* virulence genes, as well as ST-131 based on specific SNPs using *real-time* PCR. The results of the study found 98 samples were UPEC from 326 urine samples. Among them, 41% were UPEC ST-131 and 59% were non-ST-131, with 71% diagnosed as cystitis. ESBL positive as many as 32% isolates, while the rest are negative. The genes *cnf-1* was detected in UPEC ST-131 as 73,8% and *hly-A* as 73,8%. However, we also found that there was 26,1% *cnf-1* in nonST-131 and hly-A 26,2%, respectively. Hypothesis tests showed a significant association between *cnf-1* and *hly-A* genes with UPEC ST-131 ($p<0.001$; OR 6.41 for *cnf-1;* OR 14.72 for *hly-A).* Conclusion of this study, the sequence type and its resistance phenotype may have association in virulence genes occurrence.

Keywords : Virulence gene, UPEC ST-131, antimicrobial resistance

Paper ID : **AP12024**

Author(s) : **Ferbian Milas Siswanto[1*], Maria Dara Novi Handayani[1], Lonah[2], Rita Dewi[1], Zita Arieselia[2], Linawati Hananta[2], and Putu Suwarastra Andarisuta[3]**

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Title : **Transcriptional Regulation of CYP2D6 Expression and its Role in Breast Cancer**

Abstract :

Cytochrome P450 2D6 (CYP2D6), a member of the monooxygenases, participates in the metabolism of around 20% of marketed drugs. We recently elucidated the novel transcriptional regulator of *CYP2D6* expression called NF-E2-related factor 2 (Nrf2) and demonstrated its potential roles in the pathogenesis of Parkinson's disease (PD) and cancer. Since CYP2D6 is known to regulate the metabolism of tamoxifen, a drug used to treat breast cancer, we were intrigued to examine the role of CYP2D6 in breast cancer in the context of pharmacoepigenetic. In the present study, we used a comprehensive *in silico* approach to uncover prognostic role of CYP2D6 and its regulator in breast cancer. We investigated the expression and correlation between CYP2D6 and its regulators, including CEBPA, HNF4α, KLF9 and Nrf2, in The Cancer Genome Atlas (TCGA) datasets. Additionally, we confirmed these findings *in vitro* using MCF-7 cell line. The role of Nrf2 and CYP2D6 in the cellular resistance to tamoxifen was studied using MTT assay. The regulation of *CYP2D6* by Nrf2 and its regulatory region were identified using luciferase reporter assay. The results showed that Nrf2 protein was high and *CYP2D6* mRNA was low in TCGA-Breast Invasive Carcinoma (TCGA-BRCA) datasets and were related with a lower probability of survival. The similar results were observed when comparing the tamoxifen-resistant MCF-7 cells to its parental cells. The knockdown of Nrf2 upregulated *CYP2D6* mRNA levels and enhanced cytotoxicity of tamoxifen. Nrf2 required the −174/−166 bp region upstream of *CYP2D6*. We identified rs1238662089 within the identified Nrf2-binding site as the most likely variant that affect *CYP2D6* expression levels. In conclusion, our work revealed that Nrf2 regulates the *CYP2D6* expression in breast cancer and is involved in the tamoxifen sensitivity. We demonstrated, for the first time, the pharmacoepigenetic aspect of CYP2D6 that can be used as prognostic factors and potentially being targeted against tamoxifen failure.

Keywords : breast cancer, CYP2D6, Nrf2, pharmacoepigenetics, SNPs

Paper ID : **AP13001**
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Title : **Circulating EPCs Profile Based On Maturation Phase: Hightlight Lifestyle Impact On Your Vascular State**

Abstract :

Vascular repair due to endothelial dysfunction depent on circulating endothelial progenitor cells (EPCs) composition. Numerous physiological or pathological factors encourage the niche EPCs release from the bone marrow into the blood circulation, undergo differentiation into mature attribute before regenerate the damaged endothelium. However, lifestyle impact on circulating EPCs and their maturation profile remain unclear. This investigation conducted to describe a smoking and excercise impact on circulating EPCs pattern based on their maturation phase. This observational study was supported by 180 healthy male participant. Each participant were devided based on their current habbit including smoking, sedentary life style and regular physycal exercise. Peripheral venous blood was obtained to isolated mononuclear cell. Circulating EPC were categorized as $CD133^{+/}CD117^{+}$ for the EPC niche, $CD309^{+}/TIE2^{+}/CD31^{+}$ for early EPC, $CD41^{+}/CD62E^{+}$ for late EPC. All indicators are measured by Fluorescence Assosiated Cells Sorting (FACS).The composition of circulating EPCs can be categorized based on their maturation phase. The proportion of late EPCs (mature EPCs) was confirmed to be predominantly circulating in all participants. The number of circulating niche and early EPCs was significantly higher in the sedentary lifestyle group compared to the smoking and regular exercise groups (p=0.001). Meanwhile, the proportion of circulating late EPCs was significantly higher with regular exercise than with a sedentary lifestyle, and the highest proportion of circulating late EPCs was confirmed in smokers (p<0.05). It can be concluded that the Shiftness proportion of circulatinf EPCs based their maturation phase due to lifestyle may reflect continuous vascular adaptation. High level of circulating mature EPCs in smokers may reflect elevating endothelial regeneration require related to cigarette free radicals exposure. The characterization of the quality profile of circulating EPCs be necessary to approved in future investigation, regarding the possibility of cell senescence features at each phase of maturation due to lifestyle effects.

Keywords : EPCs, maturation phase, vascular adaptation, life style

Paper ID : **AP13002**
Author(s) : **Nurul Hidayah**
Affiliation(s) : Doctoral Program of Medical Science, Faculty of Medicine, Universitas Airlangga, Surabaya 60115, Indonesia
Title : **Formononetin, Ononin, Genistein Potential As PDL-1 Inhibitors In Hepatocellular Carcinoma: An In Silico Study**

Abstract :

Hepatocellular carcinoma (HCC) remains the most prevalent form of primary liver cancer and is associated with increasing mortality rates, outpacing even lung cancer according to some studies. Traditional chemotherapy treatments are widespread yet frequently cause severe side effects and are becoming less effective as cases of drug resistance rise. These challenges have catalyzed the search for new therapeutic approaches, including immunotherapy. Within this innovative field, the phytochemicals Formononetin, Ononin, and Genistein are emerging as potential alternatives for the treatment of HCC due to their anticancer properties. This research primarily focused on understanding how these compounds might combat HCC at a molecular level through an in silico study. The methodology of the study involved extensive database searches to source these phytochemicals, followed by meticulous molecular docking simulations. These simulations are critical for predicting how the molecules interact with specific proteins implicated in cancer pathways. Additionally, the study employed protein-ligand interaction analyses and 3D molecular visualizations to provide a clearer picture of the interactions at a molecular level. Among the compounds studied, Formononetin displayed the lowest binding energy during simulations, suggesting it has the highest potential efficacy in inhibiting the PDL-1 protein. This protein is a significant target in cancer immunotherapy due to its role in suppressing the immune response against cancer cells. The results of this study advocate for further investigation into Formononetin's role as a PDL-1 inhibitor, proposing that these initial in silico findings be used as a foundation for future drug design. The next recommended steps involve validating these results through in vitro and in vivo studies, which could confirm Formononetin's effectiveness and facilitate its transition from theoretical simulations to tangible clinical applications. Such research is vital for developing new, more effective cancer treatments that can provide patients with safer therapeutic options and improve overall survival rates.

Keywords : formononetin, ononin, genistein, PDL-1, hepatocellular carcinoma

Paper ID : **AP13003**

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Title : **Detection of Vitamin D Binding Protein Genes rs7041 and rs4588 in Subjects with Low Levels of 25 (OH)D Serum**

Abstract :

Genetic polymorphisms in the vitamin D Binding Protein (VDBP) gene, specifically the rs7041 and rs4588 variants, have been shown to influence serum 25(OH)D levels. An indicator of vitamin D sufficiency in the human body. This research involved 58 participants from the Faculty of Medicine, Syarif Hidayatullah State Islamic University, Jakarta (UIN Jakarta) who were willing to take part in this research by providing blood samples. Vitamin D examination uses the fluoro-immunoassay method. The Sanger Sequencing Method was used for the detection of single nucleotide polymorphisms rs7041 and rs4588. The individuals with the rs7041 TT and rs4588 CC genotypes tended to have lower serum vitamin D levels compared to individuals with other genotypes. The study also indicated that the GC1S/1F and GC1F/1F diploid patterns were frequently associated with vitamin D deficiency and insufficiency. These findings are consistent with previous research, which has shown that genetic variations in VDBP may affect the stability of the Vitamin D-VDBP complex and the protein's affinity for vitamin D. The conclusion of our research results shows that the TT rs7041 and CC rs4588 genotype patterns are more often found in the group of individuals who are Vitamin D deficient.

Keywords : VDBP, rs7041, rs4588, vitamin D, 25(OH)D

Paper ID : **AP13004**
Author(s) : **Juwita Ninda Suherman, Taufiq Alfarizi**
Affiliation(s) : President University, UIN Jakarta
Title : **The Impact of Fitness, Lung Capacity, Well-being, And Energy Balance On Medical Students' Maximum VO_2**

Abstract :

Abstract: Maximal oxygen uptake (VO_2 max) is a crucial indicator of cardiovascular and respiratory fitness. Medical students require a high VO_2 max to cope with academic demands, improve cognitive function, manage stress, maintain endurance, and invest in long-term health. This study aims to investigate the relationship between physical fitness, lung capacity, psychological well-being, and energy balance and their impact on VO_2 max among medical students at President University.
Methods: A cross-sectional study was conducted with 30 medical students from President University. Physical fitness was assessed using a 6-minute walk test, lung capacity was measured using a Peak Flow Meter, psychological well-being was evaluated using Ryff's scales questionnaire, and energy balance was determined through a 24-hour food recall and the International Physical Activity Questionnaire. VO_2 max was calculated using the 12-minute Cooper test formula. Data analysis included Pearson correlation, MANOVA, and multiple linear regression.
Results: Strong positive correlations were found between physical fitness ($r=0.78$; $p<0.001$), lung capacity ($r=0.65$; $p<0.001$), psychological well-being ($r=0.52$; $p<0.01$), energy balance ($r=0.47$; $p<0.01$), and VO_2 max. MANOVA revealed significant differences in VO2 max based on levels of physical fitness ($F=12.45$; $p<0.001$), lung capacity ($F=8.92$; $p<0.01$), psychological well-being ($F=6.37$; $p<0.01$), and energy balance ($F=5.21$; $p<0.05$). Multiple linear regression showed that physical fitness, lung capacity, and psychological well-being are significant predictors of VO_2 max ($R^2=0.82$; $p<0.001$), with physical fitness being the most robust predictor ($\beta=0.52$; $p<0.001$).
Conclusion: The study found a strong association between VO_2 max and physical fitness, lung capacity, psychological well-being, and energy balance among medical students at President University. An individual's physical fitness level primarily determines VO_2 max. Students with higher levels of these factors generally demonstrate better VO_2 max values. This study emphasizes the importance of maintaining physical fitness, lung capacity, psychological well-being, and energy balance to improve VO_2 max in medical students, contributing to their academic performance and long-term health. Implementing a comprehensive health promotion program to enhance these parameters among medical students at President University is recommended.

Keywords : physical fitness, pulmonary function, mental health, energy equilibrium, maximal oxygen consumption

Paper ID : **AP13005**

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Title : **Validation of a Simple PCR Self-Assembly With Three *Chamber* System**

Abstract :

In recent decades, *Polymerase Chain Reaction* (PCR) is a method that has high reliability and *efficacy*. The working system of this method measures the enzyme activity of DNA *polymerase thermophilus*, to amplify DNA *in vitro*. The implication of this enzyme activity is useful for *species* identification, *ancient* and/or*non ancient* genetic engineering, vaccines, forensics and so on. Therefore, PCR is a very strategic method for human existence during the past pandemic, present and future, which remains relevant, crucial, important and urgent. Meanwhile, five simple *three-chamber* PCR devices have been independently assembled but have not been tested for validation against the activity of DNA *polymerase thermophilus*. Validation of the self-assembled *Polymerase Chain Reaction* (PCR) tool will be carried out using primers of *cox* mtDNA fragments of kihung fish *(Channa lucius*). The operational system of the simple PCR self-assembly uses three *chambers*, each *chamber* equipped with a heating element and an electric current regulator. A total of five simple PCR self-assemblies will be tested with *biochemical reagents* (primer, template, buffer, $^{Mg2+}$, DNA *polymerase* and DNTP). Three self-assembled PCR tools showed positive results or the *denaturation, annealing and elongation* systems of each PCR self-assembly functioned and processed similar to the manufacturer's PCR. It is expected that the validation results strengthen the justification that PCR self-assemblies can be used as standard methods in secondary and higher science education.

Keywords : validation, operational system, three *chamber*

Paper ID : **AP13006**
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Title : **Curcumin and Turmeric Extract Inhibit SARS-CoV-2 Pseudovirus Cell Entry and Spike-Mediated Cell Fusion**

Abstract :

Turmeric extract (TE) with curcumin as its main active ingredient has been studied as a potential COVID-19 therapeutic. Curcumin has been studied in silico and in vitro against a naive SARS-CoV-2 virus, yet little is known about TE's impact on SARS-CoV-2 infection. Moreover, no study reveals the potential of both curcumin and TE on the inhibition of SARS-CoV-2 cell-to-cell transmission. Here, we investigated the effects of both curcumin and TE on inhibiting SARS-CoV-2 entry and cell-to-cell transmission using pseudovirus (PSV) and syncytia models. We performed a PSV entry assay in 293T or 293 cells expressing hACE2. The cells were pretreated with curcumin or TE and then treated with PSV with or without the test samples. Next, we carried out syncytia assay by co-transfecting 293T cells with plasmids encoding spike, hACE2, and TMPRSS2 to be treated with the test samples. The results showed that in PSV entry assay on 293T/hACE/TMPRSS2 cells, both curcumin and TE inhibited PSV entry at concentrations of 0.7 µM (P = 0.0075) and 7.7 µM (P < 0.0001) for curcumin and 1 µg/ml (P = 0.0001) and 10 µg/ml (P < 0.0001) for TE. Moreover, both curcumin and TE reduced syncytia formation compared to control cells. Our study shows that TE and curcumin are potential inhibitors of SARS-CoV-2 infection at entry points, either by direct or indirect infection models.

Keywords : COVID-19, curcumin, pseudovirus, SARS-CoV-2, syncytia, turmeric extract

Paper ID : **AP14002**
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Title : **Differentiation of Human Umbilical Cord Mesenchymal Stem Cells To Cardiomyocyte With 5-Azacytidine And Ascorbic Acid**

Abstract :

Congenital heart disease (CHD) is the main cause of death globally in the population of children under 20 years with 8–10 cases occurring for every 1000 live births. Stem cell therapy is being investigated as an alternative to CHD due to its accessibility and multiplication capacity. Stem cells are self-renewing cells that can differentiate into other cells. One type of stem cell is mesenchymal stem cells from human umbilical cords (hUC-MSCs) that can differentiate into various cell types, including cardiomyocytes. Several growth factors or small molecules can be used for cardiomyocyte differentiation. However, it is still unknown which inducer is most efficient. This research aimed to evaluate the effect of 5-azacytidine and ascorbic acid combination on the differentiation of hUC-MSCs into cardiomyocyte-like cells. The research procedures started with hUC-MSC culture, characterization of hUC-MSCs, and differentiation into cardiomyocytes. hUC-MSCs were induced using the cardiomyocyte induction medium supplemented with 5-azacytidine and ascorbic acid for 14 days. RNA samples were isolated on day 14 and expression of GATA-4 and Connexin-43 (Cx-43) genes were analyzed using the quantitative reverse transcription polymerase chain reaction (qRT-PCR) methods. The results of this study showed that the 5-azacytidine and ascorbic acid combination treatment improved the expression of genes that relate to cardiomyogenic, such as GATA-4 and Cx-43, compared to the group receiving 5-azacytidine alone. It can be concluded that hUC-MSCs can differentiate into cardiomyocytes and a combination of 5-azacytidine and ascorbic acid is a good alternative cardiomyogenic inducing factor for hUC-MSCs. Cardiomyocyte-derived hUC-MSCs have the potential to be used as a cell transplant source in biomedical applications related to cardiovascular disease.

Keywords : ascorbic acid, cardiomyocyte, differentiation, mesenchymal stem cells, 5-azacytidine

Paper ID : **AP14003**
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Title : **Enhanced Mesenchymal Stem Cell Growth and Viability Using Liposomes from Argomulyo Soybean Extract**

Abstract :

Background: The use of natural supplements in stem cell cultures is gaining interest due to the minimal risk of cellular mutations compared to animal- or chemically-based supplements. Argomulyo soybean extract, rich in fatty acids and phosphatidylcholine, offers potential as a natural supplement because of its unique nutritional content and potential benefits for cell health and proliferation. This study evaluates the effect of liposomes from this soybean extract on the growth and viability of mesenchymal stem cells (MSCs).
Methods: Human bone marrow-derived MSCs, previously cryopreserved, were cultured in six-well plates with the addition of Argomulyo soybean extract liposomes at different concentrations (5 µg/mL, 10 µg/mL, and 20 µg/mL), with complete culture medium as a control. On the third day, cell growth and viability were assessed using the trypan blue dye exclusion method and hemocytometer counting.
Results: The liposomes contained significant concentrations of phosphatidylcholine. Increasing liposome concentrations enhanced MSC proliferation in a dose-dependent manner, with the 20 µg/mL concentration yielding the highest cell growth, an increase of 45% compared to the control. The lowest liposome concentration (5 µg/mL) provided the best cell viability, surpassing the standard culture medium.
Conclusion: Liposomes from Argomulyo soybean extract significantly increase MSC proliferation at a concentration of 20 µg/mL and optimize cell viability at 5 µg/mL. These findings demonstrate the potential of liposomes as a natural supplement to enhance stem cell cultures, which is crucial for advances in regenerative medicine and tissue engineering. The results also indicate the potential clinical application of Argomulyo soybean extract liposomes in stem cell-based therapies for various medical conditions. Further research will focus on refining the liposome production process and evaluating efficacy in preclinical models.

Keywords : mesenchymal stem cells, liposomes, soybean extract, cell proliferation, regenerative medicine

Paper ID : **AP14004**
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Title : **Identification The God Gene (VMAT2) in Indonesian Al-Qur'an-memorizer Students**

Abstract :

Background: The vesicular monoamine transporter 2 (VMAT2) gene is one of many potential genes that play a role in differences in a person's spiritual abilities. VMAT2 is an integral protein that acts as a transporter for monoamine neurotransmitters. Previous studies have revealed that individuals with high A to C allele changes in this gene have high spiritual abilities compared to individuals with only the A allele. This study aimed to identify the VMAT2 gene allele and its product in Indonesian students who have memorized Al-Qur'an.
Methods: This study involving 20 Indonesian medical students who have memorized Al-Qur'an. The genome was taken from blood which was extracted using the Geneaid™ DNA Isolation Kit and sequenced using the Sanger Sequencing method. The densitometry analysis of VMAT2 gene product was conducted by ImageJ.
Results: Subjects were mostly female students (70%) with age range 19-21 y.o. Half of them Al-Qur'an-memorizer of more than 1 chapter and originated from Java Island. VMAT2 gene allele at 54, 52 and 71 position were observed. We identified variation in position 52 (CC (55%); CT (40%) and TT (5%)) and position 71 (AA (5%); CA (50%); CC (45%)). Meanwhile, densitometry analysis of VMAT2 showed that the <1 chapter Al-Qur'an-memorizer students gene products significantly higher than those who memorized more than 1 chapter ($p<0.05$). We also found that students from Islamic boarding schools had lower VMAT2 gene product than those who were not ($p< 0.05$).
Conclusion: Some variations of VMAT2 gene allele and gene products were found in Indonesian students who memorized the Quran. Further exploration of its relation to one spiritual ability is needed.

Keywords : VMAT2, the god gene, Al-Qur'an memorizer, Indonesia

TRACK 2: Zoonoses and One Health

Paper ID : **ANP20001**

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Title : **Implementation of Biosecurity and the Zoonosis Cases on Duck Farming in Peri-Urban Area**

Abstract :

Research to determine the status of farmers in implementing biosecurity and the presence of Zoonoses was conducted in peri-urban areas in West Kalimantan (Sambas, Bengkayang and Sanggau regencies). Respondents were selected by purposive random sampling. A total of 55 duck farmers (local ducks and muscovy) were interviewed based on a questionnaire of 26 questions related to farm characteristics, farmer characteristics, and biosecurity implementation. They were grouped into 5 aspects (housing, isolation, sanitation, treatment and prevention, and prevention of environmental pollution). The collected data were compiled using Excel and then analyzed using the Chi-Square and correlation tests to determine the correlation between variables. The results showed that implementation of biosecurity in farms was very low, with an average of less than 39%. The farm characteristic associated with biosecurity implementation was management. In contrast, location, population, and type of cage floor had no relationship. Likewise, farmer characteristics: Age, education, experience, and participation in training had no association with biosecurity implementation. There is a relationship between management and the application of biosecurity, which is very close (p-value = 1.000) and significance (P< 0.05). Further testing of the effect of management on the five aspects of biosecurity showed a correlation between Cage and Isolation with a very close relationship (p-value = 0.825) and significance (P<0.01). The observation and sample serology testing for zoonoses detected Avian Influenza (9 farms) and New Castle disease (19 farms), and the isolation sample detected Salmonella spp. (1 farm). These indicate potential zoonosis in this study area should be aware. The low application of biosecurity is a challenge for the government in providing farmers with an understanding of biosecurity.

Keywords : biosecurity, characteristics, duck-farmer, peri-urban, zoonosis

Paper ID : **ANP20003**
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Title : **Morfometric *Acerodon celebensis* and *Rousettus celebensis* and their Potensial Reservoar in South Sulawesi**

Abstract :

Rousettus celebensis and *Acerodon celebensis* are frugivorous bat species endemic to Sulawesi Island which still require information on morphometric and their potential as reservoirs for zoonotic diseases. One disease that is closely related to bats and has a high impact on health is Japanese Encephalitis (JE). This study aims to determine morphometric data by measuring body parts according to morphological identification standards. JE reservoir potential was carried out using real time one step RT-PCR on tissue samples. The results showed that the average morphometric data for *Acerodon celebensis* was body weight 162.25 grams, body length 138.75 mm, hind foot 41.25 mm, ears 31.25 mm, forearms 111.25 mm, and tibia 41.25 mm. Meanwhile, *Rousettus celebensis* has an average body weight of 71.2 grams, body length 98 mm, tail 17.2 mm, hind foot 17.6 mm, ears 16.6 mm, forearms 75 mm, and tibia 32 mm. There is potential as a reservoir for JE virus in both species as shown by the amplification curve even though the Cq value is high (average Cq=37.13) which indicates a low viral load. Preliminary data shows that the potential of *Rousettus celebensis* is higher than *Acerodon celebensis* (ratio 3:1). This research is an initial approach to determine the potential of the JE reservoir, especially in South Sulawesi. Therefore, surveillance of the JE virus in bats is still very necessary with more sophisticated methods in other areas of Sulawesi.

Keywords : morfometric, reservoir, Japanese enchepalitis, virus, real time PCR

Paper ID : **ANP20004**

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Title : **Distribution of Antimicrobial Resistant Genes in Primary Health Care Wastewater**

Abstract :

Antimicrobial resistant is a multi-dimensional problem that is affect economies, environment, social, humans and animal health. Wastewater is a major contributor to antimicrobial resistant. Several studies had been reported antimicrobial resistant bacteria and antimicrobial resistant genes in wastewater of Indonesian hospital. To our knowledge, study on antimicrobial resistant and antimicrobial resistant genes in primary health care of Indonesia is limited. Here, we investigated the distribution of antimicrobial resistant genes in primary health care wastewater. Water samples were collected from inlet, outlet, and community river connected to the primary health care facilities in Malang and Riau. Samples filtered with poly-ether sulfone (PES) hydrophilic membranes 0.2 mm filter membrane to separate bacteria and other debris from environment. Bacterial DNA trapped in the filtered then extracted using extraction kit. Distribution of 216 targeted resistance genes were detected using Smartchip qPCR Statistic comparation of total genes distribution for each sample location were using Anova test. Beta lactam resistant genes, aminoglycoside resistant genes, tetracycline resistant genes were most common resistance genes detected in this study. Mobile genetic elements such as insertion sequence and integrons was also detected in both cities. Community river in Malang has more resistant genes compare to Riau. There was no difference in number of genes detected in Malang and Riau, however there is difference of number genes detected in inlet and outlet of Riau ($p<0.05$). Different characteristic of cities may contribute to distribution of resistant genes. The different of number of genes detected in inlet and outlet of primary health care in Riau showed the effectiveness of wastewater treatment in that primary health care. Since many resistance genes detected differently between cities and locations, therefore bigger study is needed to monitor the circulating of antimicrobial resistance genes in wastewater of Indonesia.

Keywords : wastewater, antimicrobial resistance genes, primary health care, indonesia

Paper ID : **AP21002**
Author(s) : **Yudhi Ratna Nugraheni**
Affiliation(s) : Department of Parasitology, Faculty of Veterinary Medicine, Universitas Gadjah Mada, Yogyakarta
Title : **Investigation of Natural Infection Theileria sp. in Cattle in Sleman Regency, Yogyakarta**

Abstract :

The livestock in Indonesia is essential to agricultural development, contributing to the economic growth of the country. However, development in agriculture progress is hindered by animal health problems such as theileriosis, a tick-borne disease caused by *Theileria* parasites that infect cattle and other ruminants, leading to a significant decline in the productivity of the livestock industry. This study aimed to detect and investigate the presence of *Theileria* sp. infection in cattle in the Sleman Regency of Yogyakarta, Indonesia. Morphological identification was done using a microscope, and the molecular technique was used by polymerase chain reaction (PCR). Microscopic examination was conducted by observing blood smear stained with 10% Giemsa. A total of 101 cattle were screened; 37 (36.63%) were positive for *Theileria* sp. infection with an average of 0.1% parasitemia level. The piroplasm stage of *Theileria* sp. was observed during the microscopic examination. The positive samples were subjected to PCR assay to confirm the *Theileria* sp. infection by molecular assay. Statistical analysis was calculated and analyzed by Chi-Square, and it was revealed that there was no significant association between *Theileria* sp. infection and breeds, sex, or age of cattle. Moreover, *Theileria* sp. infection was found to be more common in females aged more than four years, and Peranakan Simental breeds cattle. The findings of this study indicate that an effective surveillance system is critical in reducing the prevalence of theileriosis and the loss of animal productivity due to theileriosis in the area. Advanced research is needed to expand the area and increase the number of samples for future control and elimination of theileriosis in the livestock industry.

Keywords : animal, cattle, health, *theileria*, theileriosis

Paper ID : **AP23001**
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Title : **Synergism of *Bacillus thuringiensis israeliensis* and *Bacillus sphaericus2362* as Lymphatic Filariasis Vector Control to Overcome Mutation *Culex quinquefasciatus***

Abstract :

Lymphatic filariasis is a main one of mosquitoe-borne diseases caused by filarial nematodes *Wuchereria bancrofti, Brugia malayi, B. timori*. *Wuchereria. Bancrofti* is transmitted by many different mosquitoe genera are *Culex spp*., *Aedes* spp., *Anopheles* spp., *Mansonia* spp. *Culex quinquefasciatus* is a main vector of filarial worm *Wuchereria bancrofti*. Lymphatic filariasis is endemic in 73 countries, and 1.1 billion people in Asia, Africa, Southeast Asia, Western Pacific, and the Caribbean are at risk of exposure. Lymphatic filariasis is a highly disfiguring, stigma and loss of work and disabling disease. Strategies of vector control has shown that the use of bacterial larvicides is an alternative for overcoming the negative effects of synthetic insecticides such as vector resistance to chemical larvicides and environmental safety. Intensive use of *Bacillus sphaericus* results in resistance of mosquitoe larvae *Culex spp* to Bs2362. **The purpose** of this study were to analyze the mutant allel of the Cqm1 gene which plays a role in the resistance of *Culex quinquefasciatus* larvae to *Bacillus sphaericus2362* and analyze the combination Bti and Bs 2362 can kill Cx.quinquefasciatus larvae that are resistant to Bs2362. **Methods** was an laboratory experimental that using 675 *Culex quinquefasciatus* larvae instar 4 which divided into 7 groupss combination Bti and Bs the following were 8:2, 7:3, 6:4,5:5, 4:6, 3:7, 2 :8 , positive control (temephos), negative control (aquadest). Detection mutation of the cqm1 mRNA in larvae *C.quinquefasciatus* CqSF and CqRL1/2362 colonies by PCR.**Results** There wasf found a Cqm1 gene mutation of Culex quinquefasciatus larvae. The calculated data was the number of larvae dead within 24 hours. The data was analyzed with Saphiro-Wilk test continued with ANAVA test and the result was highly significant p=0,000 (p<0,01) then continued with LSD test, the result showed highly significant p=0,000 on group I,II,III,IV,V,VI and VII compare with negative control and single Bs 2362.

Keywords : *Bacillus thuringiensis israeliensis, Bacillus sphaericus* 2362, *Culex quinquefasciatus* lymphatic filariasis

Paper ID : **AP23002**
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Title : **Computational One-health Studies of Fibrinogen-binding Protein A *Streptococcus agalactiae* Origin Fish and Human Clinical Case**

Abstract :

Streptococcus agalactiae belongs to the Group B Streptococcus (GBS) and is considered one of the significant pathogens, both in animals and humans. The outbreaks of GBS sequence type (ST) 283 infection in Singapore (2015) and Malaysia (2023) represent an important zoonotic disease phenomenon, where the causative factors of these cases have been linked to the consumption of raw fish. One-health studies related to the virulence factor proteins of GBS have not been extensively conducted. The GBS ST283 cases prompted a one-health study of the fibrinogen-binding protein A (FbsA) of GBS originating from fish and human clinical cases. Computational one-health studies were conducted to examine the similarity of FbsA GBS profiles originating from two different host species and to investigate the interaction profiles of FbsA with human fibrinogen (Fg). Two samples of FbsA amino acid sequences from fish and human clinical cases were obtained from the National Center of Biotechnology Information (NCBI), and the crystal structure of human fibrinogen protein was obtained from the Protein Data Bank (PDB). Alignment of the two FbsA sequence samples from the different hosts was performed using the MUSCLE program to assess the similarity of the protein profiles. Three-dimensional structure predictions of FbsA GBS were conducted using ColabFold version 1.5.5. Molecular docking studies with ClusPro version 2.0 were performed to examine the interactions between FbsA GBS and the α, β, and γ chains of human Fg. The results indicated that both samples of FbsA amino acid sequences exhibited a sequence similarity of 100%. Molecular docking investigation revealed that fish FbsA GBS interacts with the α, β, and γ chains of human Fg at the D fragment. The interaction showed residues in the repetitive regions of FbsA GBS interacting with human Fg chains and was dominated by critical residue groups, residues reported to play crucial roles in fibrinogen binding. These critical residues are mainly located in the region of repetitive residues from the 45^{th} to the 60^{th}. Additionally, binding sites also occurred at the $\beta_{119\text{-}129}$ site, which is also the site of plasmin fibrinolytic protein cleavage. These findings were suspected to contribute to the pathogenesis of the disease, particularly in the clinical symptoms of endocarditis and septicemia, and potentially as a zoonotic disease of fish origin.

Keywords : one-health, zoonotic disease, group b streptococcus, fibrinogen-binding protein a, computational studies

Paper ID : **AP23005**

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[2]Research Center Processing Food Technology, National Research Innovation Agency (BRIN), Gunungkidul 55861, Yogyakarta, Indonesia

Title : **Efficacy Test of Anthrax Filtrate Vaccine In Guinea Pig and Evaluation of Vaccination Results In Goats**

Abstract :

Anthrax is a bacterial disease can be infected both animal and human caused by *Bacillus anthracis*. Prevention of anthrax in animals in endemic area is by vaccination programme. In Indonesia, anthrax vaccine that be used is live spore vaccine and sometimes cause anaphylactic reaction post vaccination, espicially in small ruminants. The aim of research to develop anthrax filtrate vaccine that be hoped safe and giving good protection. The research be used culture supernatant of *Bacillus anthracis* field isolate, inactivated by 0.5% formaline, and be presipited by natrium hydrogen carbonate and kalium alumunium sulphate. Efficacy test be done in guinea pigs and evaluation test of vaccination be done in goats by ELISA for antibody measurement. Result of challenge test indicate that filtrate vaccine to give 60% protection, group be vaccinated by live spore vaccine to give 100% protection. The result of vaccination indicate that antibody increase in week 3, and decrease in week 12, and group be vaccinated using live spore vaccine indicate that antibody increase in week 2, and decrease in week 16.

Keywords : anthrax, filtrate vaccine, live spore vaccine, ELISA, antibody

Paper ID : **AP23006**
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Title : ***Escherichia coli* Produces ESBL which Collected from Equipment Chicken Traders in Traditional Market Banda Aceh**

Abstract :

\All activities that occur in the market and the environment allow for potential cross-contamination. One of the bacteria that can contaminate chicken meat is *Escherichia coli*. The contamination of *Escherichia coli* bacteria is at risk of producing toxins that can cause health problems, for example Extended spectrum β-lactamase (ESBL). This study aims to determine the presence or absence of *Escherichia coli* producing Extended-Spectrum β-Lactamase (ESBL) on the equipment of broiler chicken traders in traditional market Banda Aceh. This study used Cross Sectional Observation method with purposive sampling technique. The samples obtained in this study were 90 samples obtained from traditional market traders in Banda Aceh City with 30 swab variables on tables, knives, and cutting boards. *E.coli* identification testing using selective media *Eosin Methylene Blue Agar* (EMBA) and then ESBL confirmation test using Kirby-Bauer method diffusion test antibiotic cefotaxime and ceftazidime. The results of the research on equipment swabs on tables, knives and cutting boards used by broiler chicken traders in traditional market in Banda Aceh showed that 15 samples detected *E. coli* and 11 samples of ESBL-producing *E. coli* from 90 samples tested on tables (13,3%), knives (13,3%), and cutting boards (10%). From the results of the study it can be concluded that the equipment used by broiler chicken traders at traditional market in Banda Aceh City were detected *E. coli* producing Extended spectrum β-lactamase (ESBL) and it was so danger to public health and environment.

Keywords : broiler chicken, *Escherichia coli*, equipment, multidrug resistance, public health

Paper ID : **AP23007**
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Title : **Genetic Diversity in Zoonotic Malaria Transmission of Non-Human Primates and At-Risk Populations in Aceh, Central Kalimantan, and Southeast Sulawesi Provinces, Indonesia**

Abstract :

The issue of zoonotic malaria in the Southeast Asia (SEA) region is of utmost importance, especially considering the elimination goal targeted by WHO by 2030. According to a WHO report, in 2022, there were a total of 2,768 cases of malaria caused by *Plasmodium knowlesi*. These reports showed that the *Plasmodium* species that cause malaria in non-human primates (NHPs) can potentially be transmitted to humans. The molecular ligand-receptor compatibility between the parasite and the host presents barriers to the successful invasion of *Plasmodium* into host cells. Polymorphisms of the *Duffy antigen/receptor for chemokines* (*DARC*) gene, which is the erythrocyte receptor for *Plasmodium*, reportedly determine susceptibility to infection. This study collected 1 ml of whole blood from 68 NHPs and dried blood spots from 228 participants in Sabang (Aceh), Palangkaraya (Central Kalimantan), and North Buton (Southeast Sulawesi). The three pairs of primers were designed to amplify the full-length DARC region, and one pair was intended for the promoter region. The PCR product was sequenced and analyzed using bioinformatics software. This study revealed no substitution mutation on the GATA promoter region (T>C) at position -64. Comparing the sequence between NHPs and humans, we found a mismatch in the amino acid composition in the DARC N-terminal tail that interacts with the *Plasmodium* ligand. This study confirms the importance of the DARC N-terminal tail region in determining resistance to *Plasmodium* invasion. It emphasizes the need for further research and potential interventions to prevent zoonotic malaria transmission. These findings underscore the urgent need for further research and potential interventions to prevent zoonotic malaria transmission and have significant implications for public health.

Keywords : zoonotic, malaria, DARC.

Paper ID : **AP23008**
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Title : **The Distribution Analysis of Rabies-Transmitting Animal Bite Cases in Ambon City, Maluku Province 2020-2023**

Abstract :

Rabies persists as a significant public health concern in Indonesia, being a zoonotic disease transmitted mainly through bites from infected animals. Its spread into new areas has caused outbreaks, posing significant health challenges. Previous epidemiological studies focused on analyzing rabies-transmitting animal bites to determine their distribution in specific regions. This research aimed to analyze the distribution of rabies-transmitting animal bite cases in Ambon City. This study used a quantitative method to conduct a descriptive epidemiological analysis. The data were sourced from records documenting cases of rabies-transmitting animal bites, identified in Ambon City between 2020 and 2023. Data analysis was depicted in tables, bar charts, and through the use of choropleth maps for geographical analysis using Quantum Geographic Information System (QGIS) software. Spatial autocorrelation analysis was conducted using GeOda software through Moran's I test and LISA (Local Indicators of Spatial Autocorrelation) test. The research results indicated that the highest number of rabies-transmitting animal bite cases in Ambon City occurred in 2023, totaling 1359 cases. The cases occurred more frequently among males and within the age group of 20-45 years. The Nusaniwe District is the area with the highest total cases during those four years, amounting to 1256 cases. The highest incidence rate (IR) in Ambon City occurred in 2023, reaching 3.79 per 1000 population. Meanwhile, based on districts, Leitimur Selatan consistently had the highest IR, peaking in 2023 at 11.39 per 1000 population. Analysis using Moran's I test showed no spatial autocorrelation in rabies-transmitting animal bite cases in Ambon City during 2020-2023, with a negative Moran's I value approaching 0. The LISA analysis results indicated significance only in 2020 and 2021, where the Sirimau and Teluk Ambon districts showed negative autocorrelation. Our findings indicated that cases of rabies-transmitting animal bites tended to increase in Ambon City from 2020 to 2023. The nature of the spread of rabies-transmitting animal bite cases in Ambon City implies a random spatial pattern, showing no significant clustering or dispersion.

Keywords : rabies, rabies-transmitting animal bites, epidemiological analysis

Paper ID : **AP23009**
Author(s) : **Wahyu Indah Dewi Aurora**
Affiliation(s) : Center Of Excellence Scientific of Environmental Health and Diseases (SEHAD) Universitas Jambi, Indonesia
Title : **Water, Sanitation and Hygiene (Wash) Interventions On Open Defecation Habit: Structural Equation Modeling (Sem) Approach**

Abstract :

In many developing regions, inadequate sanitation and hygiene practices pose significant challenges to public health, exacerbated by widespread open defecation habits. Addressing this issue requires understanding the intricate relationships within the Water, Sanitation, and Hygiene (WASH) framework. This study employs Partial Least Square Structural Equation Modeling (PLS-SEM) to explore these connections in riverside communities, aiming to fill existing knowledge gaps. Data collected from adults in the study area reveal compelling insights. The results of the study showed a significant influence between water (p=0.001) and sanitation (p=0.000) on hygiene and a significant influence of hygiene on Open Defecation Habit(p=0.001). There is no relationship between water and sanitation in open defecation habits, nor is there a relationship between income or education and open Defecation Habits. Notably, water and sanitation exhibit significant influences on hygiene practices, emphasizing the pivotal role of clean water sources and proper sanitation infrastructure in promoting hygiene. However, the absence of a direct relationship between water, sanitation, and open defecation habits suggests the presence of additional influential factors, such as cultural norms. Surprisingly, this study challenges conventional assumptions by finding no clear association between income, education levels, and open defecation habits, signaling the complexity of socio-economic determinants. These findings underscore the necessity for comprehensive interventions. Improving water and sanitation infrastructure is crucial, but equally vital is addressing socio-cultural influences on hygiene behaviors. Collaborative efforts involving communities, policymakers, and healthcare professionals are imperative to implement effective strategies. By bridging the gap between theory and practice, this study contributes to the understanding of how WASH interventions can mitigate open defecation and enhance community well-being. Its findings serve as a call to action for holistic approaches that integrate infrastructure development with socio-cultural considerations, ultimately fostering healthier environments and improving public health outcomes.

Keywords : water, sanitation, hygiene, open defecation habits

Paper ID : **AP23010**

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Affiliation(s) : [1]Research for Vaccine and Drug, National Research and Innovation Agency, Indonesia
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Title : **Gastrointestinal Worms in Ruminants (Sheep, Goat and Cattle)**

Abstract :

Indonesia is a country that has a tropical climate. This situation causes gastrointestinal worms to reproduce well which located in the intestines. If they are in large quantities, they cause reduced appetite, resulting in weight loss, slow growth, and diarrhea, which can cause death. We collected data from the Parasitology laboratory in Veterinary Science Center, in Wates, Yogyakarta City, Indonesia from 2005 to 2009. This data is taken by classifying species and tabulating them. Specimen data of gastrointestinal worms in beef cattle with a population of 982, it was found that the percentage of nematode worms was 62%, trematode worms 31%, and cestode worms 7%. Dairy cattle with a population of 96 obtained the percentage of nematode worms 41%, trematode worms 40%, and cestode worms 19%. Goats with a population of 149 obtained a percentage of 67% nematode worms, 19% trematode worms, and 14% cestode worms. Sheep with a population of 77 heads obtained the percentage of nematode worms 57%, trematode worms 16%, and cestode worms 27%. The worms that attack many ruminants (sheep, goats, and cattle) are nematode worms, this is because most of the life cycle for this type of worm does not require an intermediary host and is supported by the climate in Indonesia which is suitable for parasite growth.

Keywords : nematode, trematode, cestode

Paper ID : **AP23011**
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[2]Doctoral Study Program Medical Science Syiah Kuala University, Faculty of Medicine
Title : **Trend of Knowlesi Malaria Suspect in Aceh Province Since 2018-2023 (Aceh Provincial Health Service Data)**

Abstract :

Malaria is an infectious disease that is transmitted by vectors and is still a health problem in society, both in the world, Indonesia and in Aceh Province. Currently, there are 5 Plasmodium parasites that can infect humans, namely: *Plasmodium vivax, Plasmodium falciparum, Plasmodium malariae, Plasmodium ovale* and *Plasmodium knowlesi*. This 5th (fifth) type is often referred to as knowlesi malaria or monkey malaria, because the parasite was first discovered in monkeys before it was discovered in humans. In the case of knowlesi malaria, there are often inconsistencies both in terms of the number of sufferers and the location of the incident. This can be caused by many factors. Therefore, it is necessary to recognize the trends and characteristics of suspected Knowlesi malaria. The aim of this research is to assess trends in knowlesi malaria for 6 years in Aceh Province based on the results of microscopic examination, so that later appropriate decisions can be made in intervention programs to prevent or reduce the incidence of knowlesi malaria. The method used is retrospective research originating from data from the Aceh Province health service. Data will be analyzed descriptively and followed by the chi-square test, using SPSS software. The results show that there were 603 suspected cases of knowlesi malaria in Aceh Province from 2018-2023. For Knowlesi malaria cases, compared with other malaria cases over the last 6 years, the number was 55.52%. The age group is adults (70.6%), dominated by men (88.2%). The incidence of knowlesi malaria occurred in 2020 with the number of suspects being 172 people with the highest number of patients in two locations, namely Aceh Jaya district (67 people) and Aceh Besar district (66 people). The conclusion that can be drawn from the results of this research is that the trend of knowlesi malaria in Aceh province is dominated by 2 regions, namely Aceh Jaya and Aceh Besar, so further research is needed to find out why in these areas there are always a large number of cases of knowlesi malaria compared to other regions. And interventions need to be improved so that the incidence of this disease can be minimized.

Keywords : malaria, *Plasmodium knowlesi*, Aceh, microscopic

Paper ID : **AP24002**
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Affiliation(s) : [1]Faculty of Health, Medicine and Life Sciences, University of Airlangga, Banyuwangi, East Java Province, Indonesia
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[4]College of Veterinary Medicine, Central Mindanao University, University Town, Musuam, Maramag, Bukidnon,The Philippines

Title : **The morphological transformation of *Trypanosoma lewisi* isolated from rodents after being preserved in an in vitro medium**

Abstract :

Atypical Human Trypanosomiasis (AHT), an emerging zoonotic disease induced by *Trypanosoma lewisi*, is currently attracting significant attention. Further investigation is warranted into the properties of *T. lewisi*, as documentation regarding its attributes is currently limited. The aim of this study was to investigate the characteristics of *T. lewisi* and assess its viability after it has been inoculated onto *Rattus norvegicus* (*R. norvegicus*) and the morphological changes on Phosphate Buffer Sulphate-Glucose (PBSG) medium. Isolates of *T. lewisi* used in the study were obtained from wild rats captured in the villages of Banyuwangi, East Java, Indonesia. The species of *T. lewisi* was confirmed by blood smear staining and PCR. A total of 10 *R. norvegicus* were inoculated with 10^3 *T. lewisi* each (4 rats were for isolate A; 6 rats were for isolate B) and then it was daily monitored for one week. For the in vitro medium test, 12 isolates were observed. A 300 mL blood containing *T. lewisi* was put into Eppendorf tube, then added with 30 mL PBSG. Additionally, a control consisting of an identical preparation without PBSG was prepared. All tubes containing isolates of *T. lewisi* were preserved at 4^{o}C. The results demonstrated that *T. lewisi* isolates in *R. norvegicus* were only detected until the 4th day and disappeared from blood circulation on the 5th day. In vitro persistence of *T. lewisi* isolates reached a maximum of 8 weeks. The survival of *T. lewisi* did not exhibit a statistically significant difference between isolates that received PBSG treatment and those that did not. The *T. lewisi* isolates exhibited sustained motility for a duration of three weeks, after which they ceased to be viable. Preservation of *T. lewisi* isolates resulted in morphological transformations, with an abnormal to normal ratio of 30:60. Among the morphological changes that transpired were the following: an elongation and reduction in body length, a blunting of the posterior portion, an enlargement of the posterior portion, the appearance of dividing leptomonas, equal binary and multiple division, metacyclic and slender trypomastigotes. This transition takes place and is hypothesised to be associated with the accessibility of food, which serves as an energy source for *T. lewisi* beyond its host.

Keywords : emerging, in vitro, PBSG medium, *Trypanosoma lewisi,* zoonosis

TRACK 3: Precision medicine and medical practice

Paper ID	:	**AP30001**
Author(s)	:	**Kurniawan, I Nyoman[1], Adnyana, Komang Putra[1], Iswari, Ida Sri[2,3], Hendrayana, Made Agus[2]**
Affiliation(s)	:	[1]Clinical Microbiology Specialist Program, Faculty of Medicine, Udayana University, Bali, Indonesia [2]Department of Clinical Microbiology, Faculty of Medicine, Udayana University, Bali, Indonesia [3]Prof. Dr. I.G.N.G. Ngoerah Hospital, Denpasar, Bali, Indonesia
Title	:	**Case Report of Candidemia by *Candida parapsilosis* in NICU at Prof. Ngoerah Hospital, Bali**

Abstract :

Background: *Candida parapsilosis* is one of the main causes of candidemia worldwide. Newborns (NB) with severe health conditions due to prematurity, extremely low weight, surgical pathologies (such as malformations), and an immature immune system are susceptible to the development of invasive fungal infections. Prolonged hospitalization, broad-spectrum antimicrobial therapy and the use of invasive devices, are risk factors for the development of nosocomial infections.
Case Presentation: A neonatal patient born preterm at 27-28 weeks gestation with a birth weight of 850mg referred from a private hospital. The patient was born by Sectio Cecaria with APGAR Score 4-6, clear amniotic fluid, did not cry immediately. History of high blood sugar 234 mg/dL and the patient had received one insulin bolus and a history of receiving surfactant. On admission to the NICU: The patient appeared lethargic, pale, hypothermic, and with deep chest wall retraction. After being admitted to the NICU for 14 days the patient still had sepsis and blood tests were done from two sides. The result of 2-sided blood culture showed *C. parapsilosis* infection using VITEK 2 COMPACT (Biomeriuex®) whereas sensitive with Fluconazole, Voriconazole, Caspofungin, Micafungin, Amphotericin B and Flucytosin. The drug of choice is Fluconazole. After receiving therapy for 4 days, the patient finally died due to worsening of the condition.
Discussion: *C. Parapsilosis* is one of the causes of fungal infection especially in premature patients with very low body weight. Invasive infection is related to the virulence factor of the fungus and the immune system of the patient. The risk factors of this patient is using mechanical ventilation, and iv line. The transmission in this patient is likely from medical device, the hospital environment or from health workers or visitors. After two weeks of treatment a new blood culture was performed, with worsening conditions and inadequate therapy the patient died on day 19.
Conclusion: This case shows that environmental contamination can be an important reservoir for potentially pathogenic microorganisms such as *C. parapsilosis* acquired from the hospital environment. Therefore, it is imperative to determine the transmission pathways in the NICU to detect sources and reservoirs of pathogens, as well as establish preventive measures.

Keywords : Candidemia, *C.parapsilosis*, NICU

Paper ID : **AP30002**
Author(s) : **Ece Aydın and Furkan Ayaz**
Affiliation(s) : Biruni University, Molecular Biology and Genetics
Title : **Exploring the Immunological Landscape of Surrogate Mothers: Insights and Implication**

Abstract :

Pregnancy immunology plays a crucial role in determining the health outcomes of offspring. Research shows that stress induced by immunological factors during pregnancy can affect postpartum conditions in mothers, potentially leading to learning disabilities in adopted offspring. A typical pregnancy involves intricate interactions among immune cells in the decidua, including macrophages, natural killer cells, and regulatory T cells Studies utilizing mouse models have demonstrated that employing wild surrogate mothers can enhance the modeling of inflammatory diseases and their treatments. Additionally, research into the immunological facets of pregnancy underscores the dynamic immune responses at the maternal-fetal interface. Regulatory T cells play a vital role in fostering maternal tolerance to the fetus and in suppressing hostile immune reactions against it. Activation of the maternal immune system during pregnancy, along with postnatal conditions, may lead to the development of schizophrenia-related phenotypes in offspring. Moreover, maternal immune challenges can disrupt brain cytokine balance and contribute to neurochemical dysfunctions associated with schizophrenia. The impact of the immune system during pregnancy also extends to maternal care and offspring behavior, with immune-challenged surrogate mothers potentially influencing fear-related behavioral pathologies in their offspring. The adoption of neonates by immune-challenged surrogate mothers could pose risks for behavioral and pharmacological abnormalities later in life.The modulation of the immune system during pregnancy is crucial for favorable outcomes, as evidenced in conditions such as preeclampsia.In summary, the immunological interactions between pregnant individuals and their offspring carry significant implications for neurodevelopment and health outcomes. Understanding these immune response complexities is essential for clarifying the mechanisms that underpin the effects of maternal immunology on the health and behavior of offspring.

Keywords : immunology, surrogate, motherhood

Paper ID : **AP33001**
Author(s) : **Bugi Ratno Budiarto**
Affiliation(s) : Research Center for Genetic Engineering, National Research and Innovation Agency, Bogor, West Java 16911 Indonesia
Title : **Integrated Single Cell-Based Bioinformatic Reveals Ribosomal Activity-Related Genes Signature of CD8+ T Cells Inform Patient Prognosis and Cellular Pathways Landscape in Human Papiloma Virus Positive (HPV^{pos}) Cervical Cancer**

Abstract :

Cervical cancer is responsible for more than 6% and it is 4th deadly disease with mortality rate 8% among cancer types in women worldwide. The five-year incidence rate of cervical cancer in Indonesia was 15.8%, with the majority of cases diagnosed at an advanced stage. Even though the HPV vaccination program has made cervical cancer a preventable disease, a group of undiagnosed women who still have the disease could have a major impact on clinical and financial aspects. Furthermore, HPV-associated cervical cancer revealed immune changes linked to viral persistence and host cell transformation at the cellular level, which affects treatment and patient survival rates. Using an integrated bioinformatics approach, the purpose of this study is to develop a set of immune cell-based gene signatures to predict prognosis and cellular pathway activity in HPV^{pos} cervical cancer. Publicly accessible cervical cancer datasets (HPV^{pos} cervical cancer vs HPV^{neg} cervical cancer) obtained from the gene expression omnibus (GEO) of the National Center for Biotechnology Information were subjected to single cell RNA sequencing analysis (scRNA-seq). Differentially expressed genes (DEG), cell identity, and cell proportion were determined for each cell cluster. GSEA analysis was conducted with a specific focus on clusters of CD8+ T cells. Furthermore, Spearman correlation analysis was conducted on DEG of cellular identity and KEGG-based pathway enrichment to analyze specific gene modules. Then, a set of gene signature was established using Lasso-COX regression model. scRNA-seq identified 26412 cells organized into nine clusters in total. Out of the clusters examined, cervical cancer types differed significantly only in the proportion of CD8+ T cells. GSEA analysis identified ribosomal activity downregulation in HPV^{neg} cervical cancer. On the contrary, GZM+CD8+ T cells exhibited ribosomal activity, which was notably prevalent in HPV^{pos} cervical cancer. As indicated by the Spearman correlation, ribosomal activity correlated significantly and positively with a number of genes originating from GZM+CD8+ T cells. RPL15, RPL35, RPLP1, RPS15A, RPS27, LAG3, and UBXN11 were found to be associated with a high survival rate, whereas RPL23A, RPL41, RPS10, RPS2, NDUFV2, HCST, MZB1, and NUPR1 were associated with a low survival rate, as determined by Lasso-COX analysis. In addition, the composition of cellular pathways in patients with HPV^{pos} cervical cancer could be categorized by risk group. In particular, the high-risk group exhibited an enrichment of neutrophils-mediated immunity, underscoring the critical relationship between neutrophils and CD8+ T cells in the development of HPV-associated cervical tumors. In conclusion, this study's integrative bioinformatics strategy demonstrated that a ribosomal signature derived from CD8+ T cells allows prognosis and highlights the significance of neutrophils in HPV^{pos} cervical cancer.

Keywords : single cells, bioinformatics, cervical cancer

Paper ID : **AP34001**
Author(s) : **Adam Moeljono**
Affiliation(s) : Department of Orthopedic Surgery and Traumatology, UGM Academic Hospital, Yogyakarta, Indonesia
Title : **Exploring New Horizons: Endoscopic Innovations in Managing Cervical Tuberculous Spondylitis with Anterior Cervical Corpectomy and Fusion (E-ACCF)**

Abstract :

Tuberculosis is one of the main health problems in many developing countries worldwide. Tuberculous spondylitis (Pott's disease) is considered the most dangerous extrapulmonary manifestation of tuberculosis. Tuberculous spondylitis can produce classic symptoms indicating cervical spondylitis and spinal cord compression. Surgical approaches in cervical tuberculous spondylitis are performed in individuals with vertebral body destruction, or individuals presenting with spinal cord or nerve root compression in order to decompress the spinal canal stenosis and stabilize the affected spine to increase sagittal stability of the segment. We present the case of a 45-year-old woman with a fracture of the 5th cervical vertebrae due to Pott's disease, complaining of progressing tetraparesis, paresthesia below C3 level, and incontinence within a month. She underwent endoscopic anterior cervical corpectomy and fusion (E-ACCF) with a titanium mass. She was also given an anti-tuberculosis therapy regimen. One month later, the patient regained the ability to walk and a massive range of motion of the shoulder and neck joint. Endoscopic surgeries such as E-ACCF can be performed to manage patients with spondylitis with cord compression symptoms, yielding great outcomes and minimal damage to adjacent structures.

Keywords : endoscopic surgery, anterior cervical corpectomy, Pott's disease, tuberculous spondylitis, spinal cord compression

Paper ID : **AP34002**
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Title : **Meta-analysis Comparing the Safety Profiles of Sodium-Glucose Transporter 2 Inhibitors and Sulfonylureas in Asia**

Abstract :

Some Asian countries have less achieved pharmacovigilance systems than in the West. Thus, safety issues regarding adverse drug reactions of Sodium-Glucose Transporter 2 (SGLT2) Inhibitors, which are considered the newest oral diabetes medication, need to be thoroughly examined. According to various guidelines, SGLT2 Inhibitors and Sulfonylureas can be utilized as Metformin add-ons for second-line therapy. The purpose of this study is to look into the safety profile of SGLT2 Inhibitors against Sulfonylurea in Asian people with type 2 diabetes. This is the first head-to-head meta-analysis comparing the safety of SGLT2 Inhibitors and Sulfonylureas in the Asian population. The protocol (CRD420234480943) has been formally registered with Prospero. A search from CENTRAL, PubMed, and EMBASE databases until February 15, 2024, yielded six RCTs (n = 692). The findings of the risk of bias analysis using the RoB2 tool suggest that there are two publications with low risk, two with some concern, and two with high-risk ratings. Meanwhile, data synthesis using Mantel-Haenszel statistical methods via the RevMan 5.3 program reveals that SGLT2 Inhibitors considerably lower the incidence of hypoglycemia when compared to sulfonylureas (RR=0.26; 95%CI=0.12-0.55). Furthermore, the usage of SGLT2 Inhibitors does not raise the risk of any adverse effects, including genital infections and urinary tract infections. In conclusion, SGLT2 Inhibitors are thought to be better tolerated in Asian T2DM patients than Sulfonylureas. To confirm this evidence in ordinary clinical practice, extensive real-world research on Asians is required.

Keywords : Asia, drug-related side effects and adverse reactions, meta-analysis, sodium-glucose transporter 2 inhibitors, sulfonylurea compounds

Paper ID : **AP34003**
Author(s) : **Shah Faisal**
Affiliation(s) : Doctoral Program of Pharmaceutical Sciences, Faculty of Pharmacy, Universitas Airlangga, Surabaya, Indonesia
Title : **Prevalence and Risk Factors Associated with Potential Drug-Drug Interactions Among Hospitalized Elderly Patients**

Abstract :

Elderly patients are at higher risk of drug-drug interactions due to polypharmacy and comorbid conditions. Drug-drug interactions are the primary cause of adverse drug events and account for rehospitalizations, increased length of hospital stays, and increased healthcare costs. Studies on the prevalence and risk factors of potential drug-drug interactions (pDDIs) are sparse in Indonesian elderly patients. Thus, the current study aimed to investigate the prevalence and potential risk factors of pDDIs. Patients aged 60 years or above admitted to a secondary care hospital for at least 24 hours were included. Demographic and clinical characteristics were recorded from the patient's medical profile. Drug-drug interactions were checked using Micromedex DrugReax software and data was analyzed using SPSS version 26. A total of 409 patients were included based on the inclusion criteria, and the mean age of the patients was (mean ± SD = 67.91 ± 6.599). In the current study, 168(41.9%) prescriptions were found with pDDIs. Furthermore, 73(17.1%) prescriptions were found with one pDDI, with a range of 1-6 interactions per prescription. A total of 369 pDDIs were found, with 158 (42.82%) moderate and 209 (56.64%) major drug interactions. Besides, 188 (50.94%) interactions have fair documentation, while 94 (25.48%) have good documentation according to the software. We found a significant difference in the prevalence of pDDIs among polypharmacy (≥ 5 drugs), use or no use of previous medications, presence or absence of comorbidity, and the presence or absence of diseases of the circulatory system, digestive system, and genitourinary system. The logistic regression analysis showed increased odds for pDDIs in patients with previous medications use (AOR = 2.254; COR = 1.771), polypharmacy (AOR = 16.309; COR = 11.709), disease of the circulatory system (AOR = 4.082; COR = 2.857), and diseases of the genitourinary system (AOR = 1.819; COR = 1.855). Besides, the odds for pDDIs were significantly decreased in patients with diseases of the digestive system (AOR = 0.573; COR = 0.608). In conclusion, the study found a high prevalence of pDDIs among Indonesian elderly hospitalized patients. Modifiable factors like polypharmacy and previous medication use could reduce the risk of pDDIs to avoid adverse events. In addition, proper attention should be given to high-risk groups while prescribing their medication regimen.

Keywords : drug-drug interactions, elderly, micromedex drugreax, Indonesia, polypharmacy

Paper ID : **AP34004**
Author(s) : **Reza Aditya Digambiro**
Affiliation(s) : Faculty of Medicine - Universitas Trisakti
Title : **The Impact of Ascorbic Acid Supplementation on D-Dimer Levels in COVID-19 Patients**

Abstract :

A potential biomarker that is being seen in COVID-19 severity is D-Dimer, in relation to clinical outcomes and radiological findings. As ascorbic acid is replete with antioxidant and immunomodulatory properties, this paper discusses its effect on the levels of D-Dimer and, thereby, its effect influencing the severity of the disease and radiological manifestations in COVID-19 patients. This was a prospective, randomized controlled trial involving 150 confirmed COVID-19 patients recruited from January to March 2021. Participants received high doses of ascorbic acid or placebo in the course of seven days. The main outcome was considered the change of D-Dimer level, and the other results were the change of clinical severity and radiological findings. Data were analyzed using the Mann-Whitney U test for between-group comparisons and Wilcoxon signed-rank test for within-group analysis. Majority of the study population were below 60 years, and there was equal distribution between males and females. In the group receiving ascorbic acid, the decrease of D-Dimer levels was compared to that of placebo ($p = 0.005$). Accordingly, marked improvement was also present among those patients who received ascorbic acid supplementation with respect to the clinical severity scores and also the high rate of radiological resolution compared to the control groups. Ascorbic acid supplementation was associated with reduced levels of D-dimer among COVID-19 patients and may find therapeutic potential to abate the severity of the ailment. The results of this study unequivocally support the rationale for further research into the benefits of ascorbic acid during the course of COVID-19 infection, especially among people who are at high risk of developing a more serious course of the disease.

Keywords : COVID-19, ascorbic acid supplementation, D-Dimer levels, clinical severity, radiological features

Paper ID : **AP34005**
Author(s) : **Nadia Husna**
Affiliation(s) : University of Jenderal Achmad Yani Yogyakarta
Title : **The Role of Antibiotics and Antivirals on Clinical Outcomes of COVID-19 Patients in Indonesia**

Abstract :

Considerable use of antibiotics and antivirals as the interim treatment of COVID-19 may generate new problems involving antibiotic resistance and adverse drug reactions. This study aimed to discover the use of antibiotics and antivirals on COVID-19 patients and its effect towards the clinical outcome. This qualitative study employed purposive sampling method along with secondary data analysis through medical data record. The data collected from COVID-19 inpatients from March 2020 to May 2021 in Sleman General Hospital Yogyakarta, Indonesia. Two hundred and twenty patients met the inclusion criteria with a high prevalence in the male group (52.3%), 45-64 years old group (48.2%), on a moderate severity level (70.5%), and having comorbid (85.5%). The majority of clinical outcomes in COVID-19 patients showed more than seven days of hospitalization (65.9%) and cured status (88.2%). The most frequently used antibiotic was a combination of azithromycin plus levofloxacin (53.2%) while antiviral was a single use of remdesivir (35.9%). Single-used antivirals significantly affected the hospitalized duration (p-value 0.037) by 3.54 times longer of hospitalized duration. Although one of the clinical outcome parameters reveal high number of cured patients, it is necessary to broadly assess all used medications notably on type of antivirals used for COVID-19 to see the potential aspects of drug use-related that may influence long stay hospitalization.

Keywords : COVID-19, antibiotics, antivirals, length of stay, clinical outcome use

Paper ID : **AP35001**
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[2]Research Center for Eijkman Molecular Biology, Research Organization for Health, National Research and Innovation Agency, Jl. Raya Jakarta-Bogor Km 46, Cibinong, Bogor, 16911, West Java, Indonesia
Title : **Efficacy of Bone Marrow Mesenchymal Stem Cell Therapy Against Hepatitis Virus Infection: Systematic Review**

Abstract :

The hepatitis B virus infected 257 million people worldwide and caused chronic hepatitis B infection, whereas chronic hepatitis C global infection is an estimated 71 million people worldwide. Although treatment for hepatitis is available, there are almost no effective drugs for restoring the injured tissue of the liver. In advanced liver fibrosis, the most effective treatment is a liver transplant. It is sufficient to restore liver function and improve liver regeneration. However, in in-vitro testing, hepatocytes appear to decrease easily due to loss of viability. This study aims to determine the efficacy of bone marrow mesenchymal stem cell therapy against hepatitis virus infection. This research design is literature studies in the form of a systematic review with the PRISMA method. Mesenchymal bone marrow stem cells can restore liver function and can be assessed by liver function parameters. Bone marrow mesenchymal stem cells also provide better prognosis results (MELD scores). Administration of bone marrow mesenchymal stem cells with the highest dose of 5×10^7 cells does not cause severe side effects or toxicity. The bone marrow mesenchymal stem cell regimen is still not standardized, and there is little information about the side effects arising after administering bone marrow mesenchymal stem cell therapy. Thus, further research on the efficacy of mesenchymal bone marrow stem cells in hepatitis virus infection still needs to be done.

Keywords : hepatitis virus, mesenchymal bone marrow stem cells, bone marrow stromal cells, bone marrow stromal cell, bone marrow cell transplantation

TRACK 4: Public health and nutrition

Paper ID : **ANP40001**
Author(s) : **Yosi Marin Marpaung**
Affiliation(s) : Nursing Program, Faculty of Medicine and Health Sciences, Krida Wacana Christian University, Indonesia

Title : **Unmasking Stigma: An Exploration of Nurses in Urban and Rural Indonesia During the Covid-19 Pandemic**

Abstract :

Studies investigating the manifestations of stigma on nurses during Covid-19 pandemic in Indonesia are still limited. Moreover, previous studies have primarily focused on nurses directly involved in Covid-19 care. This study aims to thoroughly explore the sources of stigma and the spectrum of stigma manifestations—enacted, anticipated, and internalized—experienced by Indonesian nurses working across different levels of healthcare in the urban and rural settings of Indonesia during Covid-19 pandemic. A qualitative approach using semi-structured interviews was conducted. 33 nurses who worked in the urban area of Jakarta and in rural areas of West Kalimantan have participated. Data analysis was carried out using the framework method. The findings showed that not only do nurses bear the stigma related to the Covid-19 threat, but nurses also endured and felt stigma related to their nursing profession and the stigma associated with mental health issues. Nine forms of enacted stigma, two forms of anticipated stigma, and four manifestations of internalized stigma were identified. Indonesian nurses, regardless of their contexts (i.e., place of stay, Covid-19 status, level of health service, or area of service) encountered stigma during the pandemic. Sources of stigma varied widely and included self-stigma, stigma from family members, friends, health care recipients whether in hospital or out of hospital, colleagues, and other staff in the workplace, workplace policy and practice, the community surrounding their homes, markets, transport drivers, room rental owners, religious community, and online community (netizens). It can be concluded that Indonesian nurses faced a triple burden of stigma during a pandemic such as Covid-19, as stigma perpetuated from multiple levels of sources and intersected with other issues beyond the threat of the virus itself. To enhance nurses' resilience in future health crises, greater efforts are required to mitigate stigmatization against them.

Keywords : Covid-19, Indonesia, nurse, pandemic, stigma, qualitative

Paper ID : **ANP40002**
Author(s) : **Yuni Sine**
Affiliation(s) : Program of Biotechnology, Graduate School, Gadjah Mada University, Yogyakarta Indonesia
Title : **Physico-chemichal properties of pigeon pea yogurt (Cajanus cajan L. Millsp) as functional food**

Abstract :

Nowdays, research on functional food develops rapidly, thus fermented foods diversification product becomes popular due to the variety of raw materials used as fermented products. The use of legumes as a raw material for making fermented drinks has been widely researched because it is very beneficial for people with lactose intolerance. This research aims to utilize pigeon peas (*Cajanus cajan* (L.) Millsp) as a yogurt fermentation substrate, because pigeon peas have various advantages such as high protein, high carbohydrates and low fat that can be utilized by lactic acid bacteria as fermentation substrate. Pigeon peas are widely used as traditional medicine. The research used lactic acid bacteria *Lactobacillus bulgaricus* and *Streptococcus thermophilus* as commercial starters, treated with pure pigeon pea milk and pigeon pea milk combined with skim milk. The method for making pigeon pea yogurt was soaking the beans for 12 hours, boiling at 80°C, then blending and filtering to obtain pigeon pea juice. The next stage was pasteurization at 85°C and cooling to 41°C, added with yogurt starter, then incubated at 39°C for 17 hours. All yogurts had a distinctive sour aroma, thick texture, creamy color, and have good physico-chemical properties. Pure pigeon pea yogurt commercial isolate had a viscosity content of 233.30±0.46 cP, pH 4.5±0.12, water content 86±0.82%, acidity 0.50±0.09%, soluble protein 22± 1.14%, fat content 1.80±0.06%, Propionate 0.17±0.02, butyrate 0,17±0,03, and total lactic acid bacteria 124x10-7CFU/g. Pigeon pea yogurt, a combination of skim milk with commercial isolate can be used as a functional health food.

Keywords : Pigeon pea, yogurt, physico-chemical, functional food

Paper ID : **ANP40003**
Author(s) : **Sarwo Handayani**
Affiliation(s) : Center for Biomedical Research, National Research and Innovation Agency, Indonesia
Title : **The Profile of Urban Women with Positive Human Papillomavirus in Indonesian in 2016**

Abstract :

Human papillomavirus (HPV) is the main cause of cervical cancer. In 2016, the Ministry of Health conducted a national survey on pre-cancer cervical lesions among women in urban areas in 34 provinces in Indonesia. This study aims to determine the profile of women with positive HPV.
A total of 35,408 data and cervical swab samples from women aged 25-64 years living in urban areas and meeting the inclusion criteria were collected. The cervical sample swabs then were examined for HPV-positive examination using the PCR hybridization method which was conducted at the National Institute of Health Research and Development Laboratory. The descriptive analysis was conducted to determine the prevalence of HPV-positive based on the sample characteristics.
The Result shows that most samples came from women in West, Central, and East Java, aged 35-44 years, passed from senior high school, married, unemployed, and with no history of HPV vaccination. The prevalence of positive HPV among the women based on their characteristics was almost similar around 5.2%, however, the prevalence was detected mostly in women aged 35-44 years (5.9%), university education level (5.7%), employees (6.8%), divorce status (10.3%), no history of pap smear test (6,3%) or visual inspection with acetic acid (7,1%). Furthermore, more than half of women knew about cervical cancer which was obtained from the mass media.
In conclusion, the HPV prevalence among Indonesian urban women requires special attention. Although the HPV vaccination program has been implemented since 2016 and in 2023 on a national scale, however the willingness for early detection such as pap smears or visual inspection with acetic acid and also HPV vaccination is still not optimal, therefore this needs to be increased as an effort to prevent HPV infection in women.

Keywords : human papillomavirus, urban women, Indonesia

Paper ID : **AP42001**
Author(s) : **Dicky Andiarsa**
Affiliation(s) : Research Center for Public Health and Nutrition, Research Organization for Health, National Research and Innovation Agency, Indonesia (BRIN)
Title : **Clinical Factors Affecting Dengue Fever (Df) and Dengue Haemorrhagic Fever (Dhf) Diagnosis**

Abstract :

Dengue Fever (DF) and Dengue Haemorrhagic Fever (DHF) are acute febrile illnesses caused by the dengue virus, transmitted by *Aedes* mosquitoes. The study investigates clinical factors affecting the diagnosis of DF and DHF. The study analyses data from suspected dengue cases in hospitals and health facilities in Banjarnegara District, Indonesia. Findings reveal diverse clinical presentations of DF and DHF, with DHF often characterized by bleeding manifestations, headaches, and weakness. Laboratory investigations indicate lower platelet counts, hemoglobin levels, and hematocrit levels in DHF compared to DF. Rapid Diagnostic Tests (RDTs) for dengue antibodies and NS1 antigen show potential for early diagnosis. The study underscores the importance of accurate and prompt diagnosis for effective disease management. However, limitations such as potential selection bias and retrospective data collection may affect the generalizability of the findings. Despite these limitations, the study provides valuable insights for improving diagnostic processes and developing targeted mitigation strategies for DF and DHF.

Keywords : dengue fever, dengue hemorrhagic fever, clinical factor, NS1 antigen

Paper ID : **AP42002**
Author(s) : **Saldy Meirisandy**
Affiliation(s) : University of Muhammadiyah Makassar, South of Sulawesi
Title : **Nutritional Status Affects the Risk of Decubitus Ulcers in Elderly**

Abstract :

Background: The rise in the elderly population in Indonesia has led to a significant increase in health issues. One of the problems that affect this age group is decubitus ulcers, which can be caused by various factors, including hospitalization and medical equipment. The consequences of this condition can be severe, leading to increased mortality rates and healthcare costs. Nutritional management is one of the strategies that can be employed to prevent pressure ulcers in malnourished elderly patients. **Objective**: To investigate the correlation between the nutritional status and the occurrence of decubitus ulcers in elderly patients. **Method**: Observational Analytical with a Cross-Sectional (cross-sectional) approach. Sample: All 38 participants in the elderly category (>60 years) were selected using the Random Sampling Technique, subject to meeting the inclusion and exclusion criteria. Inclusion criteria for the study are as follows: willing to participate, aged 60 or above, receiving inpatient treatment, and being in a non-ICU ward (Internal, orthopedic, neurological, and surgical). Patients with decubitus ulcers are excluded. **Research results**: The statistical test Chi-Square was used for bivariate analysis, using SPSS software to determine the relationship between nutritional status based on BMI and the risk of pressure ulcers. The results showed that there was no significant relationship with p value=0.106 ($p>0.05$). However, when we analyzed the relationship between nutritional status based on MNA-SF and the risk of pressure ulcers in elderly patients, the results showed a significant relationship with p value=0.045 ($p<0.05$). This means there was a significant correlation between nutritional status based on MNA-SF and the risk of pressure ulcers. **Conclusion:** The data shows that there is no significant relationship between nutritional status based on BMI and the risk of pressure ulcers. However, based on the MNA-SF measurements, there is a clear and significant correlation between nutritional status and the risk of decubitus ulcers in elderly patients at Syekh Yusuf Gowa Regional Hospital. These findings, which are crucial for healthcare professionals, researchers, and policymakers, highlight the importance of monitoring the nutritional status of elderly patients to prevent the occurrence of decubitus ulcers.

Keywords : nutritional status, risk of decubitus ulcer, elderly

Paper ID : **AP43001**
Author(s) : **Syeri Febriyanti**
Affiliation(s) : Faculty of Medicine and Health Sciences, Universitas Bengkulu, Indonesia
Title : **The Association between Use of Hormonal Contraception and Hypertension in Women of Reproductive Age 15-49 Years in Indonesia: Data Analysis Riskesdas 2018**

Abstract :

Hypertension is one of the non-communicable diseases caused world health problems. The prevalence of hypertension is predicted will be increase in 2025 until around 29% of worldwide adults suffered by hypertension. Hypertension in Indonesia are dominated by the female population. In women, it is suspected that one of the risk factors caused hypertension is the use of hormonal contraception. This study aims to determine the association between the last birth hormonal contraception and the prevalence of hypertension in women of reproductive age 15-49 years. The research design was cross-sectional from January to June 2023. This study used the 2018 Riskesdas data. The exposed group was 45,178 respondents who used hormonal contraception and the unexposed group was 30,845 who did not use hormonal contraception. The results showed that there was a significant association between the use of hormonal contraception and the prevalence of hypertension with PR=1.05 (95% CI 1.02-1.07). There is also a significant association between the use of hormonal contraception and the prevalence of hypertension after controlling for age and body mass index with AdjPR 1.10 (1.06–1.12). In addition, this study also assessed the association between various types of hormonal contraception including 3-month injection contraception with AdjPR value of 1.08 (95% CI 1.05-1.12); 1-month injectable contraception with AdjPR value of 0.99 (95% CI 0.93-1.05), implant contraceptive AdjPR 0.90 (95% CI 0.84-0.96), and contraceptive pill AdjPR 1.30 (95% CI 1.23-1.35). This is expected to illustrate the importance of choosing the right contraception for women of reproductive age in order not to increase the risk factors for hypertension in the future**.**

Keywords : hormonal contraception, hypertension, Riskesdas 2018

Paper ID : **AP43003**
Author(s) : **Ainun Wulandari, Teodhora*, Ika Maruya Kusuma, Jenny Tungga Dewi**
Affiliation(s) : Department of Pharmacy, Institute of Science and Technology National, Jakarta, Indonesia
Title : **Sociodemographic Analysis of Community Knowledge Levels about Antibiotics in Ciracas, East Jakarta**

Abstract :

The health problems that often occur in Indonesia are infectious diseases. Until now, the mainstay medicine for treating infectious diseases is antibiotics. Over the past few years, the use of antibiotics has increased and is a serious problem, occurring globally, including in Indonesia. There are 8 out of 10 countries in Southeast Asia that have found that several pathogenic bacteria are resistant to antibiotics. This problem can occur due to a lack of public knowledge regarding the appropriate use of antibiotics. One of the efforts made is to have good knowledge about antibiotics. This research aims to determine the relationship between demographic characteristics and the level of public knowledge about antibiotics in RW 010, Cibubur Village, Ciracas District, East Jakarta. The research design in this study is cross-sectional with analytical descriptive research type. Data collection was carried out on 110 respondents from RW 010 residents who met the inclusion and exclusion criteria. The data obtained was primary data with data analysis using chi-square. The instrument used is a questionnaire whose validity and reliability have been tested. The research results showed that most respondents were female (67.3%), mature (58.2%), had secondary education (43.6%), worked as private employees (49.1%), and had very high incomes (31.8%). Based on the relationship between demographic characteristics and the level of public knowledge about antibiotics, the results showed that there was a significant relationship between recent education and knowledge of antibiotics with a p-value <0.05, while gender, age, occupation, and income did not have a significant relationship with knowledge about antibiotics, *p-value* >0.05. Public knowledge of antibiotics has a good level of knowledge.

Keywords : demography, knowledge, antibiotics

Paper ID : **AP43004**
Author(s) : **Yeny Belawati**
Affiliation(s) : Doctoral Program on Public Health, Faculty of Medicine, Universitas Sebelas Maret, Indonesia
Title : **Economic Evaluation of Preventive Strategies during COVID-19 Pandemic: Scoping Review**

Abstract :

Introduction: The COVID-19 pandemic has resulted in death and disability in various countries around the world. Some strategies were developed to decrease the spread of the virus and prevent the collapse of the healthcare system, including lockdown, border closure, school closure, tracing, self-isolation, physical distancing, and vaccination. However, all of these strategies potentially create significant production loss worldwide. Thus, it is important to know the cost-effectiveness of these strategies. By knowing the cost and benefit of these prevention strategies, the decision maker can make a better choice when another pandemic is coming. However, there are no studies that review the cost evaluation of these COVID-19 prevention strategies. Therefore, this scoping review aimed to provide an overview of the cost evaluation of COVID-19 prevention strategies.
Method: This scoping review was searched from three electronic databases (PubMed, Scopus and Science Direct), in September 2023 to find previous studies related to cost evaluation of COVID-19 prevention programs in various countries around the world. From the relevant studies, screening was carried out using PRISMA diagrams. From the screening results, 26 studies were included in the list. Two researchers conducted a critical appraisal using the Consolidated Health Economic Evaluation Standards (CHEERS) checklist. Furthermore, data extraction and qualitative synthesis were carried out.
Result: A total of 26 studies were successfully obtained after going through the PRISMA diagram. The value of critical appraisal obtained by 4 studies (15.4%) was included in the "excellent" category, 10 (38.5%) was included in the "good quality" criteria, 10 (38.5%) was included in the "average" criteria and 2 (7.7%) was included in "poor" criteria. Based on the economic analysis used, 20 (76.9%) studies were CEAs, 5 (19.2%) studies were CBAs, and 1 (3.8%) study was CUA. Based on the interventions used, 8 studies analyzed contact tracing, 4 studies analyzed isolation, 3 studies analyzed Personal Protective Equipment, 2 studies analyzed the effect of hand hygiene, 5 studies analyzed suppression policies, and 12 studies analyzed the administration of COVID-19 vaccination. In general, it was found that most of the existing studies used the COVID-19 vaccination program as an intervention and used the CEA (Cost Effectiveness Analysis) method.
Conclusion: The results show that it is necessary to use the same choice of interventions with the same analytical method to get the right results regarding to economic evaluation. In consequence, it is expected to facilitate stakeholders in making decisions.

Keywords : cost evaluation, economic evaluation, COVID-19, prevention, cost-effectiveness

Paper ID : **AP43005**
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[2]Environmental and Occupational Health concentration, Faculty of Public Health, Cenderawasih University
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Title : **Sex Transaction to Obtain Drugs among Female and Juvenile Prisoners In Papua**

Abstract :

The proportion of drug use in Papua is still far from the specified target, which is to reduce drug use to 1.67% by the year 2024. This is caused by one of the factors: sex transactions among detainees. This study aims to analyze the role sex plays in being used. Method: This study is primary research with a case-control research design, conducted from May to September 2023 in the Special Community Correctional Facility for Children (LPKA) and the Women's Correctional Facility (LPP) in Papua Province. The sampling for this study used convenience sampling with a 1:2 ratio, consisting of 26 case samples and 59 control samples. The instrument is a modified version of the Needle Syringe Survey Quick Behaviour Questionnaire (SCP Penasun). The research data were analyzed using STATA 14 software up to the multivariate analysis of risk factor models. Results: The proportion of drug users is about 30.6%. Sexual transactions are approximately 1.59 times more predictive of drug use (95% CI: 0.46-5.39), after controlling for confounding variables such as occupation (AOR: 3.88; 95% CI: 0.93-16.1), drug use in the past year (AOR: 5.32; 95% CI: 1.50-18.2) and duration of drug use (AOR: 0.25; 95% CI: 0.05-1.13). Conclusion: Sex transactions are associated with drug use. This study recommends that addicted users be provided with treatment to reduce sexual transactions due to withdrawal syndrome.

Keywords : sex transaction, drug abuse

Paper ID : **AP43006**
Author(s) : **Rosiana Eva Rayanti**
Affiliation(s) : Satya Wacana Christian University
Title : **Sinau Rempah Model For COVID-19 Prevention in Children**

Abstract :

During the COVID-19 pandemic, there has been a significant increase in the use of spices in Indonesia. However, this surge has not been matched by a corresponding rise in spice knowledge among the country's younger generation, particularly school-aged children. Despite being vulnerable to the virus, this group is not prioritized in efforts to curb its transmission, resulting in disrupted access to education and recreational activities crucial for their development. Notably, spices have been shown to boost immunity, potentially aiding in the prevention of COVID-19 transmission. Thus, it is imperative to introduce spices to children as a preventive measure against future contraction of the virus. To address this, we have developed a community-based COVID-19 prevention education model centered around games and leveraging the benefits of spices. This model, named Sinau Rempah, combines participatory action research (PAR) and asset-based community development (ABCD) methodologies and is implemented in Ngrawan Village, Semarang Regency, Central Java. Sinau Rempah offers a diverse range of games that include physical, sensory, intellectual, and social activities in addition to providing instruction on hand hygiene, singing spice songs, and creating spice-based hand sanitizer. The educational initiative engages elementary school children, teachers, and village youth as key stakeholders. Furthermore, we propose that this approach to children's education during the pandemic aligns with the principles of the Froebel school of education and demonstrates the adaptability of play-based learning, even evolving to address public health crises like pandemics. Additionally, we highlight the potential of traditional Indonesian games as effective tools for health education in future pandemics.

Keywords : children's games, COVID-19 pandemic, education, spices

Paper ID : **AP43007**
Author(s) : **Visuddho Visuddho**
Affiliation(s) : Faculty of Medicine, Universitas Airlangga
Title : **Unveiling the Facilitators and Barriers of Adopting Healthy Diets among Indonesian Teenagers during COVID-19 Pandemic**

Abstract :

The COVID-19 pandemic has prompted shifts in dietary habits among Indonesian teenagers, with some embracing healthier choices while others succumb to unhealthy options, especially during confinement. Identifying the factors influencing these dietary changes is essential for crafting effective interventions to promote better nutrition during this challenging time. This study aimed to determine the factors facilitating teenagers' shift to healthy, well-balanced diets. A cross-sectional study enrolled 396 teenagers aged 15-17 in Surabaya and Sidoarjo, Indonesia was conducted in the second wave of COVID-19 pandemic. A self-administered questionnaire was distributed using an online survey platform. Nutrition literacy was assessed through health literacy measures related to adolescents' nutrition and diet. Predictors of the outcome were determined by logistic regression analysis. The results showed low economic status, comorbidities, and COVID-19 modules significantly predicted the shift to healthy diets. After adjusted analysis, only low economic levels (OR 0.30, 95% CI [0.13-0.70], $p<0.05$) and comorbidities (OR 0.33, 95% CI [0.12-0.93], $p<0.05$) were independent barriers against teenagers shifting to healthy diets, while choosing food without preservatives (OR 2.22, 95% CI [1.18-4.16], $p<0.05$) and maintaining body weight (OR 3.04, 95% CI [1.79-5.16], $p<0.05$) independently facilitated it. In the conclusion, strategic actions aimed at improving dietary practices and nutrition literacy in teenagers should be designed to narrow the socioeconomic gap.

Keywords : adolescents, equality, healthy diet, nutrition literacy, socioeconomic gap

Paper ID : **AP44001**
Author(s) : **Lailan Safina Nasution**
Affiliation(s) : Faculty of Medicine and Health, Universitas Muhammadiyah Jakarta
Title : **Characteristics and Dietary Patterns of Anemic Female Students of Universitas Muhammadiyah Jakarta, Class of 2021**

Abstract :

Anemia is a condition in which the concentration of hemoglobin in blood is lower than normal. A previous study conducted amongst medical students of Universitas Muhammadiyah Jakarta's class of 2021 found that 31,3% of the students were anemic. This study aims to analyze these anemic students' characteristics and dietary patterns. **Methods:** This was an analytical observational study using a cross-sectional design. All 99 anemic students are included as respondents. Dietary habits were acquired through an open-ended questionnaire where respondents fill in all food intake in 24 hours in 2 weekdays and 1 weekend. Results were analyzed using NutriSurvey 2007 to obtain macronutrient, micronutrients and fiber counts. SPSS Statistics 27 was used to analyze the respondent characteristics and dietary patterns. **Results:** The majority of respondents had a normal nutritional status (42%). Most live away from parents, in a dormitory or a rental (87.9%). The median energy consumption was 1768 kcal (normal: +/- 2250 kcal), protein 60.7 g (N: +/- 60 g/day), Fe 9.5 mg/day (N: +/- 18 mg/day), vit. B12 2.2 µg, folic acid 105 µg, vit.C 25 mg, and fiber 8.7 g. Mean consumption of carbohydrate was 238 g/day (N: 360 g/day) and fat 60.4 g/day. The figures show a lower median intake of fiber, macro- and micronutrients compared to national reference daily intakes. **Conclusion:** Amongst the 99 respondents who were anemic, the majority had a normal nutritional status. However their median consumption of energy, macronutrients (except protein), micronutrients, and fiber were below the national reference intake values of Indonesia.

Keywords : anemia, nutritional status, nutrition, macronutrients, micronutrients

Paper ID : **AP44002**
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Title : **Digital Inclusion and Mental Health Resilience: Lesson Learned from Indonesian COVID-19 Pandemic**

Abstract :

In the aftermath of the COVID-19 pandemic, the imperative to rebuild public health and fortify healthcare resilience is paramount. However, mental health among middle-aged and older Indonesians remains understudied. This study aimed to evaluate the mental health status of middle-aged and older Indonesians, examining its association with sociodemographic factors, comorbidities, grief experiences, and digital technology use, while drawing lessons from the pandemic for future public health initiatives. It was conducted during the second wave of the COVID-19 pandemic in September–October 2021, this cross-sectional study enrolled 199 participants from Java Island, Indonesia. Utilizing an online questionnaire, data were gathered on sociodemographic variables, comorbidities, experiences of grief, and patterns of digital technology usage. Mental health assessments were conducted using the Depression, Anxiety, and Stress Scale-21. Prevalence rates for depression, anxiety, and stress were found to be 11.1%, 33.7%, and 19.5%, respectively. Significant correlations were observed between mental health scores and various factors. Depression scores were associated solely with marital status, while anxiety scores were influenced by marital status, comorbidities, and the use of digital technology for health information access ($p < .05$). Stress scores were impacted by gender, marital status, comorbidities, and digital technology usage ($p < .05$). Multivariate analysis revealed that infrequent use of digital technology for accessing health information predicted higher levels of depression and anxiety. Furthermore, females and unmarried individuals were more susceptible to anxiety, while individuals with comorbidities were prone to stress. As a conclusion, this study highlights the significance of addressing the digital gap, along with other social determinants, as potential moderators of mental health among middle-aged and older Indonesians. Post-COVID-19, integrating digital inclusion strategies into mental health resilience-building efforts becomes imperative.

Keywords : aging, COVID-19, digital gap, equality, mental health

Paper ID : **AP44003**
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Title : **Early Warning Alert And Response System In Lumajang, Indonesia; Based On Surveillance System Attributes**

Abstract :

Introduction: Early Warning Alerts and Response Systems (EWARS) is a surveillance tool to detect early warning signals/threats of potential outbreaks of infectious disease. EWARS data for Lumajang District in 2022 shows that the accuracy of the EWARS report is the lowest in East Java 42.64%, while the completeness 84.48%, ranking 35th out of 38 district in East Java Province. There were 20 public health centers (80%) that had report accuracy <80% and one of public health center (4%) had report completeness <90% of the 25 public health centers in Lumajang District. This research aimed to identify the implementation of EWARS in the Lumajang District based on the attribute approach. **Methods:** This research was descriptive quantitative research. The population was all 25 health center surveillance officers. Methods of data collection by filling questioner forms and documentation. Data analysis used descriptive analysis. EC:No.2389/UN25.8/KEPK/DL/2024. **Results:** The implementation of EWARS only fulfilled the attributes of simplicity (88%), flexible (64%), data quality (72%), acceptance (100%), completeness (96%) accuracy (88%) and not fulfilling the attributes of representativeness (36%), stability (12%), utility (44%). There were 92% who wanted regular meetings related to data evaluation, performance, and training to improve the quality and benefits of EWARS. **Conclusion:** Assessment according to EWARS attributes shows the system does not meet representativeness, stability, and utility. Several recommendations can be made to address representativeness, stability, and utility. Regularly assess whether data sources and surveillance points represent the entire population or target area. Continuously training staff and ensuring there are sufficient human resources can also be done to increase target achievement according to surveillance attributes. Design the output of the system to provide actionable insights. This means not just collecting data, but analyzing it in ways that directly support public health decisions and actions.

Keywords : EWARS, attribute approach, surveillance

Paper ID : **AP44004**
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Title : **How to set up a Pharmacovigilance System for a Government Hospital, Indonesia?: A Qualitative Study**

Abstract :

Pharmacovigilance systems aim to improve patient care and safety by assessing the benefits, harms, effectiveness and risks of drugs. The implementation of the pharmacovigilance system needs to be understood and evaluated with indicators that can provide an assessment of pharmacovigilance status, activity and global impact in health services to ensure patient safety. The application of the pharmacovigilance system in developing countries such as Indonesia is still not as optimal as in developed countries. The development of this pharmacovigilance system requires an appropriate strategy to achieve pharmacovigilance goals.We conducted a qualitative research using a rapid assessment procedures (RAP) from March to May 2022 to find the solutions to obstacles and factors identified in pharmacovigilance in one of the Indonesian government hospitals. A total of 21 informants were divided into in-depth interviews and focus group discussions (FGD). The data were analyzed using thematic analyze. The results revealed that five major themes which required improvements include (1) units (implementers) of pharmacovigilance; (2) reports on pharmacovigilance activities; (3) perceptions of pharmacovigilance training; (4) awareness of pharmacovigilance activities; and (5) medication monitoring activities, drug effectiveness analyze, and medication error analyze. The results of this study serve as a model for developing pharmacovigilance system to improve drug safety assurance of patients.

Keywords : developing countries, improvement efforts, pharmacovigilance barriers, pharmacovigilance system

Paper ID : **AP44005**
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Affiliation(s) : Faculty of Health Sciences, Muhammadiyah University of Malang
Title : **Pandemic Communication Solution: Deaf Mask for Deaf and Hard of Hearing (HoH) Disabilities**

Abstract :

Background: The Covid-19 pandemic has created obstacles to a person's activities, including basic human activities, namely communication, due to the implementation of health protocols, one of which is using masks for activities outside and inside the home. This makes it difficult for people with deaf and hard of hearing (HoH) disabilities to interact with other people because the lips are covered by masks which causes limitations in receiving information and cannot relate to each other in everyday life in society. So an innovative product was created from a deaf mask, where this product can help someone who is hearing impaired to read lip movements and see the expression of their smile. The success of a business can be measured from several analyzes, namely product analysis, SWOT analysis, and marketing mix.
Objective: To find solutions for interpersonal communication for Deaf and Hard of Hearing Disabilities during the pandemic, assess the public's response to the use of special masks for disabilities, SWOT analysis for marketing strategies, the influence of the marketing mix on purchasing disability masks and the safety of deaf mask products for the public.
Method: Product analysis uses qualitative methods with respondent interviews and analysis using the NVivo application. SWOT analysis uses mixed methods, namely qualitative with interviews with the team and quantitative with IFE and EFE checklists with buyers or the public. The type of marketing mix analysis research is cross sectional and uses a Likert scale questionnaire. Then the data is analyzed using the chi-square test to find the relationship between the two variables.
Results and Conclusions: Based on the results of the analysis of deaf mask products, the most dominant were respondents who experienced communication problems with 8 respondents (53.33%), the solution for disabled people when communicating in the Covid-19 situation was using deaf mask products (86.67%) with 13 respondents, responses to deaf mask products namely 12 respondents made it easier to communicate (80.00%). In the SWOT diagram analysis, the deaf mask product is in quadrant I (Growth Oriented Strategy) where this quadrant is a very profitable situation, so the strategy applied is SO (strengths-opportunity), namely S2O2 providing education on the introduction of deaf mask products through social media such as Instagram , S3O5 promotes deaf mask products to attract buyers, S4O1 increases sales through offline or online such as marketplaces so that products can be spread widely. In the marketing mix analysis of the decision to purchase deaf mask products, the results of the chi-square test showed that the 4p marketing mix, namely product, price, place and promotion, had a significant effect on the decision to purchase deaf mask products. This is proven by the product significance value of 0.001 (sig<0.05), price 0.005 (sig<0.05), place 0.029 (sig<0.05), and promotion 0.000 (sig<0.05), so it can be concluded that the marketing mix is very influential on decisions. purchases with a significance value of 0.000 (<0.05) and based on the distribution analysis of research respondents, the majority of research respondents were 73% women, then 87% of respondents were aged 17-25 years and 43% of respondents had monthly income or pocket money <Rp. 500,000.

Keywords : communication, public health, marketing mix, purchasing decisions, deaf mask

Paper ID : **AP44006**
Author(s) : **Sayid Ridho, Asy'ari Muhammad Fahmi**
Affiliation(s) : Department of Internal Medicine, Medical Faculty, Syarif Hidayatullah State Islamic University
Title : **Prolong Waiting List of Hajj Pilgrims: What Needs to Be Clinically Prepared?**

Abstract :

The pilgrimage to Mecca, known as Hajj, is a mandatory religious duty for financially, physically, and spiritually capable Muslims (istitha'ah). It constitutes the largest annual mass gathering globally, potentially leading to illness and fatalities due to physical exertion, extensive travel, hot weather, and diverse socio-cultural environments. Istitha'ah serves as an absolute prerequisite for Hajj, yet the long waiting list for prospective pilgrims, ranging from 5 to 47 years, poses risks of functional impairments, especially among the elderly, necessitating comprehensive clinical interventions to attain istitha'ah. This study employed descriptive and retrospective cohort analyses using secondary data from the Integrated Computerized Hajj Health System (Siskohatkes) for the years 2018, 2019, and 2023. Based on the findings of this method, it can be concluded that the prolonged waiting period for Hajj candidates is associated with functional impairments, particularly among the elderly. Comprehensive healthcare interventions are crucial for achieving istitha'ah (capability) in performing the Hajj rituals. The research also indicates an increasing trend in the mortality rate among Indonesian Hajj pilgrims over the years, with the highest mortality recorded in 2023 at 774 deaths, while the lowest was in 2018 at 386 deaths. Most of deceased pilgrims were at high risk, aged over 60 years, with cardiovascular diseases as the leading cause of death. Hence, there is a pressing need for anticipatory measures and more effective healthcare management to mitigate the health risks associated with Hajj, especially for vulnerable pilgrims like mandatory of the permanent center of services hajj pilgrim structurally in vertical hospital of Government in each province, special flying group for geriatric pilgrims, and shortened length of stay for geriatric pilgrim in Saudi Arabia. More over, the study recommends strengthening promotive-preventive approaches in managing the healthcare of prospective Hajj pilgrims and implementing anticipatory measures by policymakers, including the Ministry of Religious Affairs, Ministry of Health, Ministry of Education and Culture, and other relevant sectors, to address the challenges of the lengthy waiting list and its health implications. There is also a necessity for the development of Hajj-focused medical education curricula to enhance preparedness in delivering healthcare services, fostering enhanced collaboration with Saudi Arabia, and implementing other pertinent anticipatory measures to comprehensively improve the safety and health of Hajj pilgrims.

Keywords : hajj, waiting list, istitha'ah, mortality, healthcare management

Paper ID : **AP44007**
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[2]Department of Pharmacy, Faculty of Health, Universitas Sari Mulia, Banjarmasin, Indonesia
Title : **Routine of Primary Care Visits, Medication Refills Adherence, and Blood Glucose Monitoring of Diabetes Mellitus**

Abstract :

Patients with chronic disease require continuous treatment and monitoring over extended periods of time. Their experiences and regular interactions with the doctors and pharmacists play an important role to ensure that they stay in contact with the healthcare system and manage their conditions effectively. This study aims to identify the routine of primary care visits, medication refills adherence, and blood glucose monitoring particularly in patients with type 2 diabetes mellitus. A retrospective database analysis was used from eight selected Public Health Center (PHC) and five selected Pharmacy in Banjarmasin, Indonesia. Patients visiting PHC within 3 months were included in this study. Data were collected using an observation sheet to evaluate patient's adherence to primary care visits and medication refills, and availability of regular blood glucose monitoring. Seventy five patients with type 2 diabetes mellitus were observed in this study. Only around 49% of patients made a regular visit to meet their primary care providers as scheduled. Most patients (53%) did not show the adherence to continuous medication refills at Pharmacy, indicates there were treatment gaps or medication undersupply. This study also showed that only 17% patients underwent regular monitoring through blood glucose testing every month and HbA1C testing that should be provided biannually were only conducted for 11% patients. The continuous of treatment and monitoring for patients with type 2 diabetes mellitus might be jeopardized by the lack of patient's adherence to primary care visits and medication refills, in combined with inadequate blood glucose monitoring services which fall below the standard.

Keywords : blood glucose monitoring**,** diabetes mellitus, medication refill, primary care

Paper ID : **AP44008**
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[2]Ghana Health Service, Ghana
Title : **Investigating The Relationship Between Diarrhea and Stunted Growth in Early Childhood**

Abstract :

Stunting emerges as a major issue among children in Indonesia, leading to negative impacts on cognitive function and productivity. This study aimed to explore the correlation between stunting and documented occurrences of diarrhea symptoms. The data utilized in this investigation originated from the Indonesian Nutritional Status Survey in 2021. A total comprising 87,722 children under the age of five years old were included in this study. Stunting, defined as a height for age Z-score (HAZ) below -2, served as the reference of analysis. Nutritional status assessment utilized the WHO Anthro tool, while the inferential analyses were executed utilizing Chi-Square tests and logistic regression models. Among the children under five in this study, 24.6% exhibited signs of stunting, comprising 19.1% with moderate stunting and 5.5% with severe stunting. The findings from the analysis revealed a notable association between the incidence of diarrhea and the likelihood of stunting, specifically, diarrhea increasing the odds of stunting by 1.42 times (95% CI 1.30-1.56). This study also highlights that children's age, sex, birth weight, and household toilet facility significantly influence the odds of stunting. Interestingly, we found no significant association between the source of drinking water and stunting in children. Based on the above result, diarrhea was strongly associated with child stunting. Promoting access to sanitation facilities, enhancing hygiene practices, and implementing vaccination programs against diarrheal pathogens are some steps in addressing this issue.

Keywords : stunting, diarrhea, children, under five, Indonesia

Paper ID : **AP45001**

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Title : **Efficacy of toltrazuril against Eimeria spp. infecting naturally laying hens in the poultry farm of East Java Province**

Abstract :

Coccidiosis in poultry farms remains a major problem, causing mortality at a rate exceeding 38% in Indonesia. On the basis of their morphological size, the causes of coccidiosis in poultry are classified: those classified as small (*Eimeria mitis* and *E. acervulina*), medium (*E. tenalla*, *E. necatrix*, and *E. praecox*), and large (*E. maxima* and *E. brunetti*). The aim of this study initiative was to evaluate the efficacy of toltrazuril in chickens that were naturally infected with different species of Eimeria on a poultry farm. The phases of the investigation were delineated precisely as pre-treatment and post-treatment. Faecal samples were obtained from a poultry facility housing 3400 chickens, of which two age groups i.e. Group I (32 days old) and Group II (32 days old) were utilised. During the pre-treatment phase, five stool samples were collected from each age group at arbitrarily determined locations. A treatment consisting of toltrazuril at a concentration of 25 ppm was administered for two consecutive days, per oral through the ingestion of water. After two weeks subsequent to the treatment, samples were collected at a comparable time (46 and 49 days old). Observations were carried out by calculating OPG divided into three groups of the degree of Eimeria sizes. This involved performing microscopic examinations of Eimeria morphology for each group both before and after treatment. The findings indicated that toltrazuril treatment reduced OPG by between 94.77% to 100%. After the second week following the treatment, ongoing observations revealed oocysts of diverse species of small, medium, and large size were found in all groups of chicken. In addition, the walls of oocysts of Eimeria spp. appeared damaged following treatment, which was attributed to the effects of toltrazuril administration. Overall, the efficacy of toltrazuril in managing coccidiosis on these ranches remains intact.

Keywords : *Eimeria*, coccidiosis, toltrazuril, OPG, poultry

TRACK 5: Pharmaceutical ingredients and natural products

Paper ID	:	**ANP50001**
Author(s)	:	**Niar Gusnaniar[1,2]**
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Title : **Exploring the Antibacterial Potential of Secondary Metabolite Extracts from *Aaptos* spp.**

Abstract :

Sponges have been found to produce many bioactive compounds, and Indonesian sponges, in particular, have been crucial in expanding our knowledge of chemical diversity and biological activity. *Aaptos*, a genus of sponge found in Indonesia, has been identified as having antimicrobial activity, which is of great importance due to the rise in antimicrobial resistance and infections in immunocompromised individuals. The study aims to investigate the bioactive compounds found in *Aaptos*, collected from Raja Ampat Island, Indonesia, and extracted with ethanol and ethyl acetate-methanol solvents. TLC, HPLC-DAD, and PCA were used to identify the secondary metabolites related to antimicrobial activity in both extracts. The results showed potential alkaloid and terpenoid compounds in ethanol and ethyl acetate-methanol extracts. The HPLC-DAD and PCA analysis showed that one of the ethanol extracts had a similar profile to commonly used antibacterial drugs like Ciprofloxacin, Chloramphenicol, and Ampicillin. These findings open new avenues for research and contribute to developing new and effective antimicrobial drugs. Moreover, this research helps explore marine sponges found in the Indonesian sea for bioprospecting.

Keywords : secondary metabolites, *Aaptos,* sponge, antimicrobial, natural product

Paper ID : **ANP50002**
Author(s) : **Sartika G. P.**
Affiliation(s) : Faculty of Biology, Gadjah Mada University
Title : **Antibacterial Activity of Cocoa Leaf Extract Gel Preparation (*Theobroma cacao* L.) Using Gelling Agent Na-CMC Against *Cutibacterium acnes***

Abstract :

Cocoa (*Theobroma cacao* L.) is a widely cultivated plant in Indonesia, particularly in Kolaka Regency, which is known as "Chocolate City" due to its large cocoa plantation area and is a major source of agrotourism. To increase cocoa production, leaf pruning is used, which results in a lot of cocoa leaf waste being discarded, despite the fact that cocoa leaves contain secondary metabolite compounds that have the potential to act as antibacterial agents and can be processed into useful products. The objective observed of this study is to determine the antibacterial activity of cocoa leaf (*Theobroma cacao* L.) extract gel preparations using a gelling agent Na-CMC at various concentrations against *Cutibacterium acnes*. The research design is quantitative descriptive. Gel preparations were made with varying concentrations of cocoa leaf extract, F1 20%, F2 25%, and F3 30%, using a 2.5% gelling agent Na-CMC, followed by gentamicin 0.1% as a positive control and gel preparations without extract as a negative control. In antibacterial assay, the diameter of the inhibition zone was analyzed using the ANOVA test, followed by a Post-Hoc test using the Duncan test. The results showed that there was a significant effect at various concentrations of cocoa leaf extract on *Cutibacterium acnes*, with an average antibacterial inhibitory diameter F1 13,58 ± 2,39 cm, F2 10,89 ± 2,00 mm, F3 9,27 ± 1,63 mm, K(+) 14,29 ± 0,14 cm, and K(-) 0,00 ± 0,00 mm. The strongest inhibitory formula found at a concentration of 20% cocoa leaf extract gel preparation (13.58 ± 2.39 mm).

Keywords : cocoa leaves, Na-CMC, *Cutibacterium acnes*

Paper ID : **ANP50003**

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Title : **Antibacterial Activity of Endophytic Actinobacteria Associated with *Ziziphus* sp. against Multidrug-Resistant Bacteria**

Abstract :

Exploration of the antibacterial activity of endophytic actinobacteria from bidara (*Ziziphus* sp.) needs to be carried out to obtain new alternative sources of antibiotics. The present study aimed to evaluate the antibacterial activity of endophytic actinobacteria isolated from the plant against five multidrug-resistant bacteria and identify the most potential isolates through a molecular approach. In previous study, 30 actinobacteria isolates had been isolated from the roots, stems, and leaves of *Ziziphus* sp. Of 30 isolates, colony of 5 isolates (16%) exhibited antibacterial activity against methicillin-resistant *Staphylococcus aureus* (MRSA) and *Bacillus subtilis* strain M18, as assessed using double layer agar test. Among 5 isolates, four isolates coded as BBK 1, DBK 2, DBK 3, and DBSB 1, were selected for further analysis. Interestingly, crude extracts derived these 4 isolates consistently showed inhibitory activity against MRSA with inhibition zone diameters ranging from 8±0.8–11±2.9 mm. The minimum inhibitory concentration (MIC) determined using the microbroth-dilution technique showed that the four extracts had MICs ranging from 2.500–5.000 µg/mL. Based on the 16S rRNA sequence, the four isolates belonged to the *Streptomyces* spp. with a similarity value of more than 99%. The four selected isolates are potential as antibiotic producers, particularly as anti-MRSA agents.

Keywords : endophytic actinobacteria, *methicillin-resistant Staphylococcus aureus* (MRSA), *Streptomyces* spp, *Ziziphus* sp.

Paper ID : **ANP50005**
Author(s) : **Dewi Wulansari**
Affiliation(s) : National Research and Innovation Agency
Title : **Damnacanthal and Nordamnacanthal, Two Antimicrobial Compounds from the Root Bark of *Rennellia speciosa* (Wall. Ex Kurz) Hook.f.**

Abstract :

Rennellia speciosa (Wall. Ex Kurz) Hook.f. is a shrub plant, grow and spread in South East Asia including Burma, Thailand, Borneo, Sumatra and Kalimanta (Indonesia), and Malay Peninsula. In Kalimantan, it is called ginseng merah. The bark or roots of *R. speciosa* has been used locally for oedema and bone pain, while the decoction of the leaves and roots was used in a bath to diminish rheumatism. Despite its uses, study on the biological properties and the chemical content of this plant are still rare. In thi study we performed bioassay-guided isolation on the root bark extract of *Rennellia speciosa*. Bioassay was carried out using a TLC bioautography assay against bacteria *Staphylococcus aureus* and *Escherichia coli*. Four anthraquinones, nordamnacanthal (**1**) and damnacanthal (**2**) 2-formyl-3-hydroxy-9,10-anthraquinone (**3**), rubiadin (**4**), and a coumarin, scopoletin (**5**), were successfully isolated from the extract. Compound **1** and **2** were found to be responsible for the antimicrobial activity. In addition, this study reported isolation of scopoletin from the plant genus of *Rennellia* for the first time.

Keywords : *Rennellia*, nordamnacanthal, damnacanthal, scopoletin, *Rennellia speciosa,*

Paper ID : **ANP50006**

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Title : **Dihydroxy Benzoate Derivative Compound From Ethyl Acetate Extract of Stem Bark "Bawang hutan" (*Scorodocarpus borneensis* Becc.) As An antioxidant**

Abstract :

Forest onion (local name "bawang hutan", *Scorodocarpus borneensis* Becc. is one of the medicinal ingredients that is considered to have useful properties as cooking spices, antioxidant etc. This plant is widely found in the forest areas of Kalimantan, Indonesia. Meanwhile, his cultivation is still very lacking. In this study, the bark of bawang hutan was refluxed with methanol solvent, then the methanol extract was partitioned with ethyl acetate-water = (1:1). The obtained ethyl acetate extract is fractionated by column chromatography (SiO_2; *i*). *n*-hexane : ethyl acetate = 20 : 1~1 : 1; *ii*). *n*-hexane-ethylacetate = 5 : 1 and preparative Thin Layer Chromatography (*n*-hexane-ethylacetate = 2 : 1) gives one pure isolated. Based on the interpretation of spectroscopic spectra [FT-IR, NMR 1 Dimension (^{1}H- & ^{13}C-NMR, DEPT), NMR 2 Dimension (HMQC, COSY and HMBC)] and mass spectra (by LC-MS), the chemical structure is a compound derived from dihydroxybenzoate that has antioxidant activity of IC_{50} 79.36 ppm.

Keywords : bawang hutan, forest Onion, *Scorodocarpus borneensis* Becc, olacaceae; dihydroxybenzoic acid derivative

Paper ID : **ANP50007**
Author(s) : **Rayhan Helmyana Putra[1], Aika Latifah Alawiyah[1]; Gian Primahana[2], Vera Permatasari[2], Muhammad Eka Prastya[2*]**
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Title : **Endophytic Bacteria Isolated from Temulawak Rhizome (*Curcuma xanthorriza*): Antibacterial Properties, And Isolation of Active Fractions**

Abstract :

Endophytic bacteria associated with plants reported could produce promising numerous secondary metabolite compounds that have antibacterial properties. This research aims to investigate the antibacterial potential and to isolate its active compounds along with determining bacterial identity of endophytic bacteria isolated from temulawak rhizome (*Curcuma xanthoriza*). Thirty-seven isolates of endophytic bacteria were successfully obtained from temulawak rhizomes taken from Sumbawa Island (West Nusa-Tenggara). The antibacterial activity of the selected isolate (TKS24) had the widest inhibition zone against *S. aureus* strain ATCC 25923 (20 mm) and *B. subtilis* strain ATCC 6633 (12.3 mm) bacteria in the strong category. This was confirmed again by the extract obtained from the TKS24 isolate, which had antibacterial activity at concentrations of 20,000 and 50,000ppm with a powerful category againts *S. aureus* (20mm & 24mm) and *B. subtilis* (10.5mm & 11mm) bacteria. Further, the Minimum Inhibitory Concentration (MIC) value of TKS24 extract was obtained at 39.06 ppm, respectively, for the two target bacteria with an MBC value of >31.24ppm. Based on thin-layer chromatography (TLC) and column chromatography methods, we obtained forty-six fractions which showed various compound characters. A total of 29 fractions had varying antibacterial activity against *S. aureus* and *B. subtilis* bacteria, with MIC values ranging from 12.5 ppm to >1,000 ppm. Interestingly, fraction 6 has the most potential fraction with linear MIC values against *S. aureus* and *B. subtilis*, with the lowest values of 12.5 ppm and 25 ppm. Ultimately, identification of the 16s rRNA gene revealed that isolate TKS24 belonged to the *Pseudomonas* sp. group and confirmed as having PKS-1 and NRPS gene cluster as detected by PCR particular method. These findings indicate that the endophytic bacteria isolated from temulawak in Sumbawa Island - NTB could be an alternative constituents possess as antibacterial drugs candidate.

Keywords : antibacterial, *Curcuma xanthoriza*, endophytic bacteria, *Pseudomonas* sp., *PKS I gene cluster*

Paper ID : **ANP50008**
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Title : **Antibacterial and Antimycobacterial Activities of *Fusarium Oxysporum* Fungal Extract Associated with *Myristica Fragrans* Houtt. Roots**

Abstract :

Tuberculosis (TB) is the second-most potentially deadly bacterial infection, according to the World Health Organization (WHO). Antibiotic resistance in tuberculosis greatly affects drug discovery efforts. Natural products from endophytes can lead to the discovery of new compounds, including drugs. Natural product development aimed at discovering new antibacterial and antimycobacterial compounds. In this study, the search for new drugs began with the discovery of active antibacterial and antimycobacterial compounds in *Fusarium oxysporum* fungal associated with *Myristicin fragrans* Houtt. root. *Fusarium oxysporum* fungal were extracted with ethyl acetate and then fractionated using silica gel column chromatography. Ten fractions ranging from 5.3 mg to 279.5 mg were produced from the eluent hexane: ethyl acetate (5:1) and dichloromethane: methanol (10:1). The fraction elution on thin layer chromatography (TLC) was observed as 1-3 spots. The antibacterial activity of E. coli and S. aureus was then analyzed using TLC dot-blot, TLC bioautography, and minimum inhibitory concentration (MIC). The results showed that fractions F2, F6, F7, F8, F9, and F10 found antibacterial E. coli activity, while fractions F7, F8, and F9 showed antibacterial S. aureus activity. The smegmatis method was used to determine the anti-mycobacterial potential, which demonstrated the activity at the percentage of inhibitory concentrations (IC). The results show that the IC of F2, F3, F6, F7, F9 and F10 are more than 95%.

Keywords : tuberculosis, *Fusarium oxysporum* fungal, *Myristicin fragrans* Houtt., antibacterial, anti-mycobacterial

Paper ID : **ANP50009**
Author(s) : **Praptiwi**
Affiliation(s) : Research Center for Pharmaceutical Ingredient and Traditional Medicines, National Research and Innovation Agency
Title : **Endophytic Fungus KpRi13-1 from Blak Turmeric (*Kaempferia parviflora*): Antioxidant Activity, Species Identification, And Chemical Compound Content By LC-HRMS**

Abstract :

Endophytic fungi are known to be able to produce secondary metabolite compounds that are similar to their hosts as well as their bioactivity. On the other hand, black turmeric (*K.parviflora*) belongs to the Zingiberaceae family and is known to have several biological activities, but its availability is still limited. Therefore, this study evaluated antioxidant activity, identified the endophytic fungus to the species level using phylogenetic analysis, and identified secondary metabolite content using LC-HRMS of endophytic fungus KpRi 13-1 from the rhizome of *K.parviflora*. The antioxidant activity was carried out using several methods, including TLC-bioautography, DPPH (*1,1 diphenyl-2-picrylhydrazyl)* free radical scavenging activity, Ferric ion reducing antioxidant power, and ABTS *(2,20-azino-bis(3-ethylbenzothiazoline-6-sulfonic acid).* Identification of KpRi13-1 fungal endophyte based on the morphological characteristics showed that endophytic fungus Kp.Ri13-1 was classified as Hypomycetes. Results of TLC-bioautography showed the presence of antioxidant-active compounds in the extract. The verification name based on the phylogenetic, the content of chemical compounds by LC-HRMS, and the evaluation of the antioxidant potential of endophytic fungus KpRi 13-1 will be discussed in this study.

Keywords : *Kaempferia parviflora,* KpRi13-1 endophytic fungus, antioxidant potential, phylogenetic, LC-HRMS

Paper ID : **ANP50010**
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[4]Directorate of Utilization of Research and Innovation by Industry, National Research and Innovation Agency (BRIN), Jakarta, Indonesia
Title : **Immunostimulant Activity of Formulae Extracts Contain *Curcuma xanthorrhiza*, *Morinda citrifolia* and *Phyllantus niruri* on Rat**

Abstract :

Objectives: Curcuma xanthorrhiza, Morinda citrifolia and Phyllantus niruri are traditionally used in Indonesia to maintain people health and protect from any diseases. We formulated these three plants to develop an immunostimulant herbal medicine and prove it through a pharmacodynamical assay on animal testing. The purpose of this study is to investigate the immunostimulant activity of Formulae Extracts Contain Curcuma xanthorrhiza, Morinda citrifolia and Phyllantus niruri (FECMP) on rats. In vivo study was carried out in two methods, namely the carbon clearance method to analyse the nonspecific immunity and the method with vaccine induced rat to analyse the specific immunity. Carbon clearance method was done on four groups of rats, five rats each, consisting of negative control group and three dose groups (30, 60, 120 mg/200gBW). Rats were given FECPM orally for 28 days, then inducted with carbon. Spectrophotometric carbon content examination was carried out at 1, 3, 6, 9 and 15 minutes after induction. After termination, peritoneal macrophages were isolated for Nitric Oxide (NO) production analysis. Results showed that FECPM could increase index phagocytic and NO production but not significantly ($p>0.05$) compare to negative control. Another method was done using vaccine tetanus toxoid (TT) inducted rats, which were divided into five groups, five rats each, consisting of normal group, control group and three level doses group (30, 60, 120 mg/200gBW). FECPM were given orally for 28 days, while at days 7, TT was inducted subcutaneously once. IgG, IgM and IFN-γ were analysed on day 0, 7, 14, 21 and 28, while haematologically profile was analysed on day 14 and 21. Results showed that starts from day 14, FECPM could increase IgG and IgM significantly ($p>0.05$) than normal control. FECPM also could increase IFN-γ significantly ($p>0.05$). The haematologically profile. The conclusion of this study proves that FECPM have the immunostimulant activity by inducing specific immunity factor, such as IgG, IgM and IFN-γ, better than nonspecific immunity.

Keywords : *Curcuma xanthorrhiza, Morinda citrifolia, Phyllantus niruri,* immunostimulant, carbon clearance, vaccine TT, IgG, IgM, IFN-γ

Paper ID : **ANP50011**
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Title : **In vitro Evaluation of α-Glucosidase Inhibitory Activity of *Phyllanthus niruri* L. herbs Fractions and Prediction of Related Compounds**

Abstract :

Diabetes mellitus (DM) is a chronic metabolic disease characterized by elevating of blood glucose level. The prevalence of DM increase in which almost 95% of DM people were diagnosed type 2 diabetes mellitus (T2DM). One approach to treat T2DM involves inhibiting the α-glucosidase enzyme. This study aimed s to evaluate the in vitro α-glucosidase inhibitory activity of *Phyllanthus niruri* herb fractions (PNF) and predict the compounds involved. *P. niruri* herb powder was extracted with 70% ethanol at room temperature. The crude extract was subsequently separated using an medium-pressure liquid chromatography (MPLC) instrument and the each fraction was analyzed using ultra-high performance liquid chromatography with quadrupole time-of-flight mass spectrometry (UPLC-QTOF-MS). The obtained PNFs were evaluated for their potential of α-glucosidase inhibitory activity. Furthermore, molecular docking simulations were then conducted on the substances contained in *P. niruri* using Molegro Virtual Docker (MVD) version 6.0 with the α-glucosidase enzyme protein model from Saccharomyces. The crude extract of *P.niruri* herb inhibited the α-glucosidase enzyme, with an IC_{50} value of 1.48 µg/ml. Furthermore, PNF-1, PNF-2, PNF-3, PNF-4, PNF-5, and PNF-6 showed higher inhibitory activity on α-glucosidase than PNF-7 and PNF-8 fractions at the concentration of 3 µg/ml, significantly. The value of inhibitory activity of PNF-1 to PNF-6 ranged from 98.36% to 99.69%, while PNF-7 and PNF-8 were 75.15% and 21.16%, respectively. UPLC-QTOF-MS analysis of PNF-1 revealed the presence of several compounds, including Geraniin, Corrilagin, Phyllantin, and Repandusinic acid. In the docking study, these compounds demonstrated minimal energy binding, namely Geraniin (-43 kcal/mol), Corrilagin (-152 kcal/mol), Phyllantin (-135 kcal/mol), and Repandusinic acid (-236 kcal/mol) in which they were probably potential as anti DM agents. The results of this study supported the utilization of *P. niruri* herb as a potential candidate among natural products for anti-diabetic purposes through the α-glucosidase inhibition mechanism.

Keywords : α-glucosidase inhibition, fractions, *Phyllantus niruri* herb

Paper ID : **ANP50013**
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Title : **One-Pot Isothiocyanate Synthesis from Amines Using 4-Toluenesulfonyl Chloride in Water**

Abstract :

Isothiocyanates is one of the important compounds in medicinal chemistry and can be found in many bioactive compounds. Although there are many starting materials that can be converted to isothiocyanates, amine is considered as suitable one due to the wide availability via addition of carbon disulfide followed by desulfurization process. However, report methods suffer from at least one disadvantage such as requirement of large amount of toxic reagent, toxic organic solvent, organic base, multi-step reactions and elaborate temperature. Therefore, in this work, we aim to develop the green synthesis of isothiocyanate using 4-toluenesulfonyl chloride (TsCl) as a less hazardous desulfurizing agent and perform the reaction in water reaction to minimize the use of toxic organic solvent. Isothiocyanate was successfully synthesized from amine and carbon disulfide in the presence of potassium carbonate (K_2CO_3) as a base and 4-toluenesulfonyl chloride (TsCl) as a desulfurizing agent in 1 wt% TPGS-750-M/H_2O. Under optimization condition using 4-toluenesulfonyl chloride as desulfurizing agent, various amines from halogen, electron-donating group, and benzylamine were converted to isothiocyanate in good yields (60-90%). All the structure compounds were confirmed by ^{1}H and ^{13}C NMR. The advantages of this reaction are one-pot synthesis of isothiocyanate under mild condition and utilize low-toxic reagents.

Keywords : isothiocyanate, in water reaction, 4-toluenesulfonyl chloride

Paper ID : **ANP50014**
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Puspiptek Area, 452 Building, South Tangerang, 15314, Indonesia
Title : **Phytochemical Screening and Bioactivity Assay of Methanol Extract of *Cassia fistula* L. of Bark**

Abstract :

Phytochemical screening of the methanol extract of *Cassia fistula* L.stem bark was conducted to determine secondary metabolit compound, total phenol and total flavonoid contents using the Folin Cio-Callteau and Aluminum Chloride Colorimetric methods, respectively. Antioxidant activity was conducted using the 1,1-diphenyl-2-picrylhydrazil (DPPH) and *2,2-azinobis-3-Ethylbenzothiazoline-6-Sulfonic Acid* (ABTS) methods, antidiabetic activity was determined by inhibiting the alpha glucosidase enzyme. The BSLT method was used to test the toxicity of MECFB on *Artemia sallina* L shrimp larvae. LC-MS MS analysis for compound identification. The analysis showed that flavonoids, tannins, and saponins were present in the methanol extract of *C.fistula* bark. The total phenol and flavonoid content of the methanol extract of *C.fistula* bark was determined 35,695 ± 0.3 mg EGA/g extract and 84,225 ± 1.9 mg EQ/g extract. The antioxidant activity tests using the DPPH and ABTS methods has IC_{50} values of 11,272 ± 0.4 and 1.82 ± 0.2 µg/mL, respectively and showed an IC50 value of 3.36 ± 0.0053 µg/mL during antidiabetic evaluation. LC50 of 131,826 µg/mL .The compounds identified through LC-MS MS analysis are d-Cathecin, Catechin-(4α→8)-catechin, 6''-O-p-Coumaroylaloesin, Rehmannioside A, Ulmoside, and Archangelicin.

Keywords : *Cassia fistula L.,* biological activity, LC-MS MS

Paper ID : **ANP50015**
Author(s) : **Rozana Zuhri**
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Title : **Production of Antibiotics Using Endophytic Mutant Bacteria from Leaves *Baccaurea motleyana* Mull. Arg**

Abstract :

The research "Production of Antibiotics using Endophytic Mutant Bacteria from leaves *Baccaurea motleyana* Mull. Arg leaves " aims to produce antibiotics from isolates of endophytic mutant bacteria on *Baccaurea motleyana* Mull. Arg leaves. Endophytic mutant bacteria on *Baccaurea motleyana* Mull.Arg leaves can produce higher antibiotics than the parent strain. This research conducted at the Biology Education Research Laboratory, Merangin University, Jambi. This research uses an experimental method with descriptive data analysis. Mutation technique in the parent strain using Ultra Violet (UV) light irradiation with time ranges starting from 0, 20, 40, 60, 80, 100, and 120 minutes Antibiotic-producing. bacterial mutants were selected using the paper disc method using *Escherichia coli* and *Staphylococcus aureus* test bacteria. The research showed five antibiotic-producing bacterial mutants, EBRM 1, EBRM 2, EBRM 3, EBRM 4 and EBRM 5. The EBRM 4 bacterial isolate was a bacterial mutant that effectively inhibited the growth of the test bacteria *Escherichia coli* and *Staphylococcus aureus*. Based on identification with 16 S RNA, the bacterial isolate EBRM 4 has 98% similarity to Bacillus cereus. The characteristics of the EBRM 4 bacterial isolate macroscopically and microscopically, namely macroscopically, the shape of the mutant colony is round, the surface appears flat, the edges are curved, and the color of the colony is yellowish white/milky white, while microscopically, it is bacillary and gram-positive.

Keywords : antibiotics, mutants, endophytes bacteria*, Baccaurea motleyana*

Paper ID : **ANP50016**
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[2]Faculty of Pharmacy, Universitas Indonesia, Depok 16424, West Java, Indonesia
Title : **Production Optimization and Purification of Ligninolytic Enzymes from Indonesian White Rot Fungi for Cellulose Preparation**

Abstract :

Treatment of patients with pandemic diseases such as Sars-Cov-2 require certain medications and dietary supplements. One of the excipients in medicines is cellulose and its derivatives. Cellulose is the main constituent in lignocellulosic biomass which are available in large quantities around the world. Isolation of cellulose from low-cost lignocellulosic biomass (LCB) waste by involving biological process has potential to deliver economical materials for drug manufacturing as well as minimizing negative impact on the environment. Pretreatment is a preliminary stage and a bottleneck in the conversion of LCB due to the recalcitrant of lignocellulose structure to decomposition by physical, chemical, or biological actions. Biological pretreatment by using ligninolytic enzymes has been widely studied due to their advantages which correspond to the low requirement of chemicals and energy input, mild operation condition, and less toxic waste. In this study, nine white rot fungi (WRF) are evaluated for their potential to produce ligninolytic enzymes. Optimization of enzyme production was carried out by using Plackett-Burman and Central Composite Design. Multi-step purification which involves ion exchange chromatography is carried out to increase the purity and activity of the enzymes. Among the four candidates, isolate F017 (*T. hirsuta*) was the best producer of laccase (Lac) and manganese peroxidase (MnP) at 137.7 and 99.99 U/L respectively. The use of cocoa pod husk as substrate resulted in the highest Lac and MnP yield at up to 439.3 and 536.9 U/L respectively. Among 11 factors, biomass, glucose, peptone, incubation period, and agitation were identified as the most significant factors for production of Lac and MnP. Subsequently, biomass and incubation were further optimized by using Central Composite Design (CCD).

Keywords : biomass waste, white rot fungi, optimization, ligninolytic enzymes, cellulose

Paper ID : **ANP50017**

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Affiliation(s) : Division of Microbiology, Department of Biology, Faculty of Mathematics and Natural Sciences, IPB University, 16680, Bogor, West Java, Indonesia

Title : **Profiling Antibiotic-Biosynthetic Genes and Screening Antibacterial Activity of Endophytic Bacteria Isolated from *Syzygium cumini***

Abstract :

Exploration of antibacterial activity from endophytic bacteria associated with *Syzygium cumini* is necessary to provide new sources of antibiotics to overcome resistance in pathogenic bacteria. This study aimed to detect the presence of antibiotic-biosynthetic genes and evaluate the antibacterial activity of endophytic bacteria isolated from *S. cumini*. Based on PCR screening, nine out of 15 isolates (60%) carried at least one antibiotic-biosynthetic gene. Furthermore, dual-culture assay showed that four out of 15 isolates showed remarkable antibacterial activity against either one or both target bacteria, including *Staphylococcus aureus* ATCC6538 and *Bacillus subtilis* ATCC19659. Endophytic bacteria coded as B2 and D1 exhibited the most promising antibacterial activity against both strains. Consistently, crude extracts of these isolates could inhibit the growth of *B. subtilis* ATCC19659 and *S. aureus* ATCC6538, with inhibition zone diameters ranging from 8 to 12.33 mm. According to microbroth-dilution assay, these isolates were more active to *B. subtilis* ATCC19659 compared to *S. aureus* ATCC6538, as indicated by their minimum inhibitory concentration (MIC) values of 234.38 µg/mL for the B2 extract and 468,75 µg/mL for the D1 extract. Both extracts had minimum bactericidal concentration (MBC) higher than their MIC values. Liquid chromatography quadrupole-tandem mass spectrometry (LC-MS/MS) analysis showed the crude extracts derived from these isolates contained several antimicrobial compounds, such as cyclo (tyrosyl-propyl), cyclo (prolylvaly l), etomidate, kaempferol, curcumin, melophlin M, aminopregnane, smenospongine, piptamine, pumilacidin C, and n-methyl-N-[(5-propyl-1H-pyrazol-3-yl) methyl]-1,4-dithiepan-6-amine. The two selected isolates need to be studied and developed further as antibacterial agents.

Keywords : *Bacillus subtilis*, antibiotic-biosynthetic genes, LC-MS/MS, *Staphylococcus aureus*

Paper ID : **ANP50018**
Author(s) : **Muchlisyam*, Lisda Rimayani Nasution, Mutiara B.G**
Affiliation(s) : Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Universitas Sumatera Utara
Title : **The Technique Analysis Quercetin and Ascorbic Acid Simultaneously In Tomatoes Using A Development Spectrophotometry UV**

Abstract :

Quercetin and ascorbic acid have been used as adjuvant supplements in the management of COVID-19. When determining the quantity of natural material components, numerous reference books suggest using High Performance Liquid Chromatography (HPLC) as the preferred method. Nevertheless, this approach makes substantial operational expenses, mostly due to the utilisation of many solvents and costly equipment. Karo Distruct, located in North Sumatera, is known for its tomato production. According to the research, this fruit is rich in quercetin and ascorbic acid. At this time, scientists have not yet ascertained the composition of these two elements concurrently by Spectrophotmetry UV with computational mathematical software. The objective of the study was to determine the levels of quercetin and ascorbic acid in tomato fruit using Mean Centering of Ratio Spectra. The absorption spectrum of ascorbic acid and quercetin was prepared using methanol as a solvent. The Mean Centering of Ratio Spectra of ascorbic acid was measured at a wavelength of 238 nm, with a regression equation of Y = 0.0279X - 0.0004. For quercetin, the measurement was measured at 206 nm, with a regression equation of Y = 0.1787X + 0.1402. The quercetin and ascorbic acid levels in tomatoes were quantified by measuring the quercetin content at 470 mg/100 g. The tomato fruit contained a percentage of 0.47 ± 0.03% and an ascorbic acid amount of 1310 mg/100 g or 1.31 ± 0.007%. The validation measurements of accuracy, precision, linearity, LOD, and LOQ show that the mean centering ratio spectra and chemometric method for determining simultaneous quercetin and ascorbic acid in tomato fruit exceeds the requirements outlined in the ICH guidelines.

Keywords : ascorbic acid, quercetin, tomatoes, spectrophotometry uv, mean centering of ratio spectra

Paper ID : **ANP50019**
Author(s) : **Sri Wahyuningsih**
Affiliation(s) : Faculty of Biology, Gadjah Mada University
Title : **The Different Potential of Secondary Metabolite from *Peperomia pellucida* (L.) for Tuberculosis Drug with Bioinformatic Design**

Abstract :

Tuberculosis (TB) is an infection that targets the respiratory system and kills, making it one of the top 10 most lethal diseases in the world. Existing anti-tuberculosis medications can be expensive and have negative side effects for patients. Many plants have been shown to contain biologically active substances that may be useful as TB medicines. P. pellucida (L.) is one of these species. The goals this study is investigation using a bioinformatic technique to investigate the ability of bioactive chemicals in *P. pellucida* (L.) as an alternative TB medication. The method used in this research is Bioinformatic design (in-silico simulation) including Pharmacokinetics analysis, Druglikeness analysis, QSAR Evaluation, Molecular Docking and Molecular Dynamic Simulations. Patuloside A is a claiming anti-tuberculosis candidate molecule with the lowest binding energy value among other types of compounds and induces stable binding interactions on the target.

Keywords : *Mycobacterium tuberculosis*, tuberculosis, *P. pellucida* (L.), bioinformatic design

Paper ID : **ANP50020**

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Title : **The Potency of Antibacterial and Antibiofilm Properties Derived from Soil *Streptomyces* spp. Against Bacterial Antibiotic Resistance**

Abstract :

The increase of bacterial antibiotic resistance infection has rapidly been gaining attention around the world. In this recent report, the antibacterial activity of 20 soil actinomycetes strain has been determined against bacterial resistance strains including *Escherichia coli* strain M19, *Bacillus subtilis* strain M19, and *Methicillin Resistant Staphylococcus aureus* (MRSA). The correspondeng soil actinomycetes were isolated from soil in Muna, Island, South Sulawesi, Indonesia. Among them, one actinomycetes isolates encoded APM-21 exhibited strong and a broad antibacterial spectrum, hence there was selected for further study to extract its secondary metabolites following antibacterial, and antibiofilm assessment. The ethyl acetate extract of this selected actinomycetes were determined for its antibacterial spectrum, and the minimum inhibitory concentration (MIC) ranged from 78 to 10000 µg/mL. Interestingly, this extract also displayed significant biofilm inhibition values ranging from 6.06 to 72.4%. Based on the result, APM-21 extract showed the best antibacterial and antibiofilm activities with the strongest values against MRSA. Nucleotide sequencing of the 16S rRNA gene showed that APM-21 isolate to have identity with *Streptomyces panayensis*. On the basis of Liquid Chromatography Tandem-Mass Spectrometry (LC-MS/MS) analysis, some antibacterial compounds namely rancimanycin III, enteromycin, paramagnetoquinone C, and caerulomycin was presence on this potential extract suggesting their contribution to the most potential activities recorded in current report. Ultimately, our study provides new insights into a promising candidate for use in an active compound combating strategy to prevent MDR bacterial strains infection derived from soil *Streptomyces* sp. which indigenous from Muna, Island, South Sulawesi, Indonesia.

Keywords : antibacterial, antibiofilm, Muna island, *Streptomyces panayensis.*

Paper ID : **ANP50021**

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Title : **The Potential Of *Uncaria gambir* as An Antifibrolitic Agent In Rat Liver**

Abstract :

It has been reported that ROS have a pivotal role in the progression of liver fibrosis; therefore, restoring the redox homeostasis in the liver may become an important treatment strategy. *Uncaria gambir* (Hunter) Roxb. (UG) is a traditional medicine with rich in polyphenolic catechin, exerting high antioxidant activity. This purpose of this research is to investigate the possible mechanism that induces the hepatoprotective activity of UG extracts in alleviating ROS-induced hepatic tissue damage through a fibrolytic mechanism. In this study, UG extract (the 96% ethanol extract of UG dry sap, EDS-96) was prepared, and the anti-fibrosis effect was investigated in the established CCl_4-induced liver fibrosis rats. Study characterization exhibited that the EDS-96 showed high polyphenol and catechin contents. In the *in vivo* experiment, the liver biomarker level and immunohistochemistry assay were measured to evaluate the fibrolytic activity of EDS-96 (65; 131; 262 mg/kg *BW*). The results showed that EDS-96 inhibited the CCl_4-induced elevation of AST, ALT, ALP, bilirubin, and MDA. Furthermore, the microscopic studies revealed a restoration of the hepatic architecture of EDS-96-administred rats and a reduction of the fibrosis area, the number of lobules, and the fat area percentage. The immunohistochemistry results proved such liver fibrosis attenuation through inhibition of TIMP-1 expression and reduction of type I collagen accumulation. These findings suggest that UG extract had hepatoprotection activity through an antioxidant-mediated fibrolytic mechanism by altering MMP–TIMP balance and simultaneously reducing type I collagen deposition.

Keywords : fibrolytic, CCL_4-induce liver fibrosis, TIMP-1, type I collagen, *Uncaria gambir* (Hunter) Roxb.

Paper ID : **ANP50022**
Author(s) : **Febri Wulandari**
Affiliation(s) : Faculty of Pharmacy, Universitas Muhammadiyah Surakarta, Surakarta, Indonesia
Title : ***Vernonia elaeagnifolia* leaves extract revealed antioxidant and cytotoxic effect against 4T1 and MCF7 breast cancer cells**

Abstract :

Vernonia elaeagnifolia, a leech repellent and sun protection plant, is being studied as a therapeutic candidate because of its antioxidant, antihyperlipidemic, antifungal, and antibacterial properties. This research will assess *Vernonia elaeagnifolia* extract's (VEE) antioxidant and cytotoxic properties. We macerated *Vernonia elaeagnifolia* with 96% ethanol to get VEE. A tube test was used for a preliminary phytochemical investigation. The antioxidant impact was assessed using the 2,2′-azinobis (3-ethylbenzothiazoline-6-sulfonic acid) (ABTS) test. To determine cytotoxic potency (IC_{50}), we used the MTT test on 4T1 and MCF7 breast cancer cells, as well as Vero non-cancerous cells. VEE substances include alkaloids, flavonoids, saponins, phenolics, and tannins. According to the ABTS technique, the VEE has modest antioxidant activity, with an IC_{50} value of 147.28 µg/mL. VEE had IC_{50} values of 165.50, 185.68, and 299.66 µg/mL against 4T1, MCF7, and Vero cells, respectively. VEE's selectivity index was 1.6–1.8, indicating that it is still non-selective to cancer cells. Our findings support *Vernonia elaeagnifolia*'s development as a breast cancer antioxidant and cytotoxic agent.

Keywords : *Vernonia elaeagnifolia.,* antioxidant, cytotoxic, breast cancer, selectivity index

Paper ID : **ANP50024**
Author(s) : **Ariyanti Saputri**
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Title : **Phytochemical Profiles, Antioxidant and Anticancer Activity from Leaves and Seed Extracts of *Myristica fragrans***

Abstract :

Nutmeg (*Myristica fragrans*) is a plant that grows naturally in Indonesia and widely used in the food and industrial sectors. Nutmeg seeds have been widely studied because they have a variety of compounds with good activities, but research on the leaves still needs to be completed. Therefore, this research compared nutmeg leaves and seed extracts' secondary metabolite content and bioactivity. This study aims to determine the phytochemical contents of nutmeg leaves and seed extracts by phytochemical screening and GC-MS analysis, as well as its potential as an antioxidant and anticancer. The antioxidant activity test uses the DPPH (1,1-Diphenyl-2-picryl Hydrazil) method measured at a wavelength of 517 nm. Meanwhile, the anticancer activity test uses MCF-7 cells with the MTT assay method. Nine compounds (lipid, phenylpropanoid, lignan, terpenoid, and quinone groups) were identified by GC-MS analysis in the leaves extracts. Meanwhile, seed extract has 23 compounds from the lipid, fatty acid, phenylpropanoid, lignan, and terpenoid groups. The antioxidant activity of nutmeg leaves and seed extracts was carried out using the DPPH method, while the cytotoxic activity against MCF-7 cells used the MTT method. Nutmeg leaves have more potent antioxidant activity than nutmeg seeds, with IC_{50} values of 17.80 µg/mL and 53.01 µg/mL, respectively. The cytotoxic activity test on MCF-7 cells also showed that the inhibition value of nutmeg extract (26%) was higher than that of nutmeg seeds (22.73%). This research shows that nutmeg leaves extract has the potential to carry out further research regarding the bioactivity of its compounds.

Keywords : Nutmeg, phytochemical, antioxidant, cytotoxic, MCF-7 cells

Paper ID : **AP55001-ANP**

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Title : **Acute Toxicity Evaluation of A Standardized *Morinda citrifolia* Fruit Extract**

Abstract :

For generations, both in rural and urban regions, Indonesians have utilized medicinal plants as a traditional form of treatment. In order to ensure that the use of herbal medicines conforms with established quality standards and ensures safety through preclinical studies, including toxicity and efficacy, scientific study into efficacy, safety, and quality standards is required, as the usage of these medicines is growing. Because of their bioactive qualities, all parts of the Mengkudu plant have been utilized for traditional medicine for over a millennium. Pharmacological studies reveal that mengkudu fruit has anti-inflammatory, anti-diarrheal, anti-hypertensive, and anti-hypoglycemic properties. In order to meet regulations and guarantee the security and caliber of traditional medicine intake, toxicity testing is also necessary.Using both male and female DDY mice, the acute toxicity of an ethanol extract from Mengkudu fruit (Morinda Citrofolia) in a 1:1 maltodextrin ratio was assessed. The extract was administered orally via stomach examination at a dose of 3.75 g/kg bw, 7.5 g/kg body weight, and 15 g/kg body weight to three sets of male and three female animals. During the course of 14 days, observations were taken regarding the occurrence of toxic symptoms, the quantity of animals discovered dead during testing, and the animals that passed away naturally (moribund state). Every animal was beheaded and subjected to a macroscopic inspection on the fifteenth day. The internal organs were measured and examined under a microscope to check for anomalies. LD50 value for all deceased animals (moribund or not), determined using the Thompson & Weil method. Results of the test, from a single dose to the maximum of 15 g/kg bw. Neither male nor female mice died while being used as test subjects. The important finding from these findings is that noni fruit ethanol extract's oral LD50 is greater than 15 g/kg bw, placing it in the category of "relatively harmless" substance

Keywords : *Morinda citrifolia,* standardization, acute toxicity

Paper ID : **AP51003-ANP**
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Title : **Phytochemical constituent and *in vitro* activities of different parts of Mengkudu (*Morinda citrifolia* L)**

Abstract :

Introduction: Mengkudu or noni (*Morinda citrifolia* L.) is a plant widely used in traditional medicine because every part of it can prevent and treat various diseases. **Purpose**: This study aims to compare the profiles of chemical compound content and in vitro activity of noni fruit, seeds, pulp, and leaves methanol extracts. **Method**: The levels of phenolic compounds and flavonoids were quantitatively determined using the colorimetric method. Meanwhile, antioxidant activity is based on the ability to reduce DPPH, ABTS, and FRAP free radicals. Enzyme inhibition assays for α-glucosidase and tyrosinase were also performed. Investigation of chemical compound profiles was carried out using LCMS-MS. HPTLC-Densitometry was used to evaluate the levels of the main compounds in each extract. The data obtained was further analyzed using principal component analysis (PCA) to identify the potential of methanol extract from noni-plant parts. **Results**: The seed extract had the highest phenolic content and the best antioxidant activity. The highest flavonoid content is found in leaf extract. Meanwhile, fruit extract showed the best inhibitory activity against the enzymes α-glucosidase and tyrosinase. Based on the phytochemical analysis, scopoletin and ursolic acid compounds dominate. HPTLC-Densitometry results show the order of scopoletin compound levels in the MeOH extract of seeds >fruits>pulp. Meanwhile, the highest levels of ursolic acid compounds were found in the MeOH extract of leaves>fruit>fruit flesh. Based on these results, the choice of ingredients will influence the effects of the pharmacological activity of noni extract.

Keywords : mengkudu, phytochemical, antioxidant, α-glucosidase inhibition, hptlc, scopoletin

Paper ID : **AP51001**
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Title : **Assessing the Potency of Bevacizumab and Sunitinib Malate in Combating Experimental Cerebral Malaria in Mice**

Abstract :

Sequestration of red blood cells (RBCs) infected by *Plasmodium falciparum* within the brain microvasculature, a phenomenon known as cerebral malaria, can cause hypoxia. Consequently, the body may initiate angiogenesis to compensate for the impaired blood flow and oxygen delivery. However, angiogenesis may disrupt the integrity of the blood-brain barrier (BBB), triggering inflammatory responses that exacerbate complications if left untreated. Thus, in this study, we investigated the effect of the angiogenesis inhibitor agents: Bevacizumab 10 mg/kg BW (B) and Sunitinib Malate (SM) 30 mg/kg BW as adjunctive therapies for cerebral malaria. We hypothesize that treatment with B and SM can lead to hypoxia in parallel with the increase of HIF-1α and VEGF and the decrease of BBB-related proteins, Occludin.
Twenty-four C57BL/6 mice aged 8 to10-week-old were divided into six groups: 1) Negative Control (C), 2) Cerebral Malaria-Positive Control (CM), 3) Cerebral Malaria with B (CMB), 4) Cerebral Malaria with SM (CMS), 5) B treatment only (CB), 6) SM treatment only (CS). 10^6 parasites *Plasmodium berghei* ANKA were infected into groups 2, 3, and 4. The haemoglobin level and the mice behaviour were monitored daily. The control mice without *P. berghei* infection were undergoing euthanasia on day-7 and the brains were perfused prior to histological analysis. The *P. berghei*-infected mice showing cerebral malaria symptoms including coma were euthanized, followed by brain perfusion. The perfused brains were processed for Immunohistochemistry (IHC) and Transmission Electron Microscopy (TEM) analyses.
We observed a significant increase of HIF-1α expression in all groups (P= 0.036) compared to the control. The CM group had the highest expression of HIF-1α (P=0.042), while CMB and CMS had reduced HIF-1α expression compared to the CM group. There was a significant increase of VEGFα expression in all groups (P= 0.049) compared to the control. The CM group had the highest expression of VEGFα while slightly reduced in CMS and significantly reduced in CMB. The control group had the highest expression of Occludin. The CM group had lower expression of Occludin compared to the control group and the administration of Bevacizumab and Sunitinib Malate increased the Occludin although not significant (P=0.289). Additionally, the ultrastructural study showed that both CM and CMS groups demonstrated a new formation of blood vessels.
Our research findings indicate that both bevacizumab and sunitinib malate have the ability to reduce hypoxia in mice with cerebral malaria. This suggests that they could potentially be used as additional therapies in future therapeutic development of cerebral malaria.

Keywords : cerebral malaria, *P. falciparum*, angiogenesis, bevacizumab, sunitinib malate

Paper ID : **AP51004**
Author(s) : **Yulianita*, Zaldy Rusli and Anisa Fitriani**
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Title : **Screening and Optimization Of Deep Eutectic Solvent Against Phylantin Compounds In Meniran Leaves (*Phyllanthus niruri* L.)**

Abstract :

Phyllanthin is a marker compound from Herba Meniran which has properties as an immunomodulator. For isolate the phyllanthin compound, extraction is carried out using a suitable solvent. Organic solvents have several negative impacts both on compounds in plants and on the environment. Therefore, a solvent is needed to replace organic solvents such as NADES which is a green solvent and has several advantages compared to organic solvents.The purpose of this study was to determine the best NADES (choline chloride-sugar alcohol) as a green solvent to replace organic solvents and determine the effect of temperature (°C), time (minutes), and NADES:Water ratio (%) on optimum phyllanthin content. NADES combinations used were choline chloride-fructose (1:1), choline chloride-glucose (1:1), choline chloride-glycerol (1:1), choline chloride-sorbitol (1:2), and choline chloride-propylene glycol (1:2). The extraction method used is UAE with extraction conditions using 3 factors namely extraction temperature (25°C, 37°C, 60°C), extraction time (10 minutes, 30 minutes, 60 minutes) and NADES:Water ratio (25%, 50%, 75%). The results showed that the NADES-5 solvent (choline chloride-propylene glycol (1:2)) was the best NADES ingredient mixture which produced the highest levels of phyllanthin in the initial screening with an average phyllanthin level of 8.2153 mg/100 g. The optimum conditions for this method were obtained at a temperature of 25°C for 60 minutes and a NADES:Water ratio of 75% with an average phyllanthin content of 8.0612 mg/100g.

Keywords : NADES, UAE, RSM, meniran, phyllanthin

Paper ID : **AP51005**
Author(s) : **Galuh Widiyarti**
Affiliation(s) : Research Center for Pharmaceutical Ingredients and Traditional Medicine, National Research and Innovation Agency (BRIN), Indonesia
Title : **In Silico And In Vitro Antibacterial Studies Of Citronella Esters For Oral Infection Diseases Treating**

Abstract :

This study aims to examine the antibacterial potential of citronellyl isobutyrate (CIB) and geranyl isobutyrate (GIB) to treat oral infectious diseases caused by *Porphyromonas gingivalis* and *Streptococcus mutans*. CIB and GIB were derived from citronella oil. An in silico antibacterial study was done using autodock 4.2 method, while in vitro antibacterial test was performed by agar diffusion assay. The results showed that the esters exhibited high binding energy to bacterial enzymes and were active as antibacterials, althought less active compared to the standard of streptomycin sulfate. This finding indicates that the compounds can be categorized as strong antibacterials agents, and also have potential to be developed as antibiotics for gingival infections

Keywords : citronella oil, ginnival, antibiotic candidate

Paper ID : **AP51007**
Author(s) : **Vilya Syafriana**
Affiliation(s) : National Institute of Science and Technology
Title : **Phytochemical Screening and Extract Characterization of Jombang Leaf (*Taraxacum officinale*) Using Various Solvents**

Abstract :

Jombang (*Taraxacum officinale*) is a wild plant that the Javanese people utilize as traditional medicine. This study aims to screen the secondary metabolites and analyze the specifin and non-specific parameters of extracts from Jombang leaves extracted by four different solvents: ethyl acetate, 80% ethanol, 50% ethanol, and aqueous. The specific parameters included sample identity and organoleptic, whereas non-specific parameters included drying loss, specific gravity, ash content, and water content. All tests refer to the Indonesian Materia Medika and the Indonesian herbal Pharmacopeia as standards for medicinal plants. The findings revealed that the phytochemical content of the ethanol solvents was able to attract alkaloids, whereas flavonoids emerged in the ethyl acetate and aqueous solvents. The results of the non-specific characteristics demonstrated that the extract from organic solvents fulfilled the requirements of no more than 11%, while the aqueous solvent surpassed the norm by 13.72%. the specific gravity of the four extracts ranges between 0.04 and 0.10 g/mL. the water content of the four extracts fits the standards, which were not more than 10%. Meanwhile, the ash content of the 80% ethanol extract did not meet the requirements because it exceeded 8.5%, but the other three extracts met the requirements.

Keywords : aqueous, ethanol, ethyl acetate, maceration

Paper ID : **AP51008**
Author(s) : **Erwi Putri Setyaningsih**
Affiliation(s) : Institute of Sains and Technology National
Title : **Unveiling the Antibacterial Activity and Phytochemical Screening of Extracts and Various Fraction from *Spatholobus ferrugineus***

Abstract :

Berebat (*Spatholobus ferrugineus*) is a plant that grows in East Belitung and has been used empirically by the local community to treat sprue, but not much research has been carried out to prove its pharmacological activity. There is a lack of literature regarding the use of Berebat and appropriate extraction methods and solvents to be able to extract secondary metabolites, so this research aims to find a suitable solvent that can maximize the antibacterial activity of Berebat. Maceration and fractionation with a variety of solvents were chosen to extract Berebat's secondary metabolites. Phytochemical screening was carried out on extracts and fractions to identify secondary metabolite groups. The antibacterial activity test was carried out using the disc diffusion method at concentrations of 5%, 15%, 25%, 35%, 45%, with a positive control of Chlorhexidine and a negative control of aquadest. The results showed that Flavonoid, tannin, and alkaloid found both in extract and fraction. Berebat extract had antibacterial activity against *Streptococcus sanguinis* at concentrations of 5%, 15%, 25%, 35%, 45% with a diameter of inhibition zone 9.32 mm, 11.15 mm, 11.53 mm, 13.95 mm, and 14.35 mm. Diameter of the inhibition zone of the n-hexane fraction were 7.87 mm, 8.37 mm, 8.76 mm, 9.04 mm, and 9.21 mm. Diameter of the inhibition zone of the ethyl acetate fraction was 10.63 mm, 13.77 mm, 14.29 mm, 15.83 mm, 16.53 mm, and the positive control was 16.64 mm. The ethyl acetate fraction has the highest antibacterial activity.

Keywords : berebat, *Spatholobus ferrugineus*, fractionation, antibacteria

Paper ID : **AP52002**
Author(s) : **Tri Yuliani**
Affiliation(s) : Research Center for Pharmaceutical Ingredients and Traditional Medicine
Title : **Evaluation of Anti-Osteoporotic Activity of Enzymatic Product of *Smallanthus sonchifolius* in Rat Model of Menopause**

Abstract :

Osteoporosis in post-menopausal women has been associated with bone loss that can lead to fracture. Alternative therapy is needed because some patients avoid estrogen-based treatment due to inconvenient side effects. DFA III has been reported to prevent bone loss through a non-estrogenic mechanism. Therefore, in this study, we tested encapsulated DFA III-containing enzymatic product of yacon tubers (*Smallanthus sonchifolius)* standardized water extract (ESW) on the bone of ovariectomized rats. 5-month-old female Wistar rats were divided into -five groups. Two groups served as control, i.e., sham and ovariectomy. One week after ovariectomy, three groups received either a low dose of ESW (25 g/kg/day), a high dose of ESW (50 g/kg/day), or DFA III (3 g/kg/day) in drinking water for eight weeks. At the end of the study, an X-ray image of the bone was captured, and the density of the bones was calculated. Serum alanine phosphatase as another bone marker, as well as estrogenic activities marker, i.e., uterine weight and lipid profile, were measured. While ovariectomy reduced bone density, the ESW alleviated the changes, almost similar to DFA III. Interestingly, while ovariectomy dramatically reduced uterine weights, both uterine weights and lipid profile were generally unchanged by the treatments. These data indicate the potency of both DFA III and ESW to prevent bone loss through an estrogen-independent mechanism.

Keywords : *Smallanthus sonchifolius*, bone density, ovariectomy, DFA III

Paper ID : **AP52003**
Author(s) : **Aqsa Aufa Syauqi Sadana[1*], Muflihatul Muniroh[2], Hermawan Istiadi[3], Ryan Halleyantoro[4]**

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Title : **In Vivo Assay of *Gigantochloa Apus* Shoot Extract as Biolarvicide for Myiasis-Causing Fly Larvae**

Abstract :

Myiasis has been reported to occur in animals and humans, especially in open wounds. In humans, it usually infests body tissues or body fluids, so that cases of myiasis endanger human health. The use of synthetic insecticides in treating myiasis can have side effects and has the potential to disrupt the metabolic system. It is hoped that the choice of natural materials, namely apus bamboo shoots *(Gigantochloa apus),* will provide a solution. This study aims to assess the effectiveness of anti-myiasis biolarvicide from apus bamboo shoot extract against myiasis infection using in vivo assay. This research was carried out using a true experimental method by a post-test only control group design using Wistar rats as experimental animals. Mortality data were transformed to obtain mortality percentages. There were 5 treatment groups, 3 groups with 1%, 3% and 5% apus bamboo shoot extract, positive and negative control groups. The analysis is continued statistically to obtain the results of different tests and probit analysis of LC_{50} and LT_{95}. The extract was identified by GC-MS, TLC and phytochemical analysis showing the presence of lethal compounds such as n-Hexadecenoic acid, phenolic group, and HCN. A mortality percentage of 100% was shown in treatment P3 at the 32nd hour. The addition of extract concentration was able to kill 50% (LC50) and 95% (LC95) with respective values of 1.43% and 6.006%. P3 treatment has the smallest lethal time value compared to other treatments. The results obtained show that the higher the concentration given, the smaller the lethal time value produced, the more effective the formulation is used due to the larvicidal mechanism of alkaloids, flavonoids, tannins and saponins such as disrupting the nervous system of the enzyme AChE (Acetylcholinesterase), disrupting the epigenetic pathway by DNA fragmentation process, inhibition of protein kinase activation on ATP and as an antiproliferative agent. The addition of apus bamboo shoot extract to the spray gel preparation provides effective results on the mortality of fly larvae that cause myiasis. The addition of 5% extract (P3) showed significant effectiveness on the percentage of mortality.

Keywords : apus bamboo shoot extract, fly larvae, mortality, myiasis

Paper ID : **AP52005**
Author(s) : **Dian Yuliartha Lestari**
Affiliation(s) : Doctoral Program, Medical Faculty, Airlangga University
Title : ***Ziziphus mauritiana* In Triple Negative Breast Cancer: Integrating Network Pharmacology And In Vitro Evaluation**

Abstract :

New metabolites isolated from botanical sources have attracted much attention in recent years due to their traditional and therapeutic significance. Ethnopharmacological studies show that *Ziziphus mauritiana* is a medicine that can be used against several types of diseases, the most recent being cancer. However, the underlying mechanism is still unclear. Therefore, this study aims to explore the mechanism of *Ziziphus mauritiana* in treating Triple Negative Breast Cancer using network pharmacology. In this study, anticancer compounds were obtained from relevant literature, and related targets of *Ziziphus mauritiana* and Triple Negative Breast Cancer treatment targets were obtained from public databases. A protein-protein interaction network was constructed to screen hub genes using the STRING database and Cytoscape software. Protein module cluster analysis was then performed using the Cytoscape MCODE plugin. Furthermore, Gene Ontology, Kyoto Encyclopedia enrichment, and gene and genome pathway analysis were carried out for common targets among *Ziziphus mauritiana* and Triple Negative Breast Cancer-related targets using the DAVID database. After that we used the MTT assay method to exemined the cytotoxic effect of *Ziziphus mauritiana* on the MDA MB 231 cell line. This study identified six potential active compounds, 93 potential therapeutic targets, and five hub genes for *Ziziphus mauritiana*, which are involved in apoptosis, cancer cell proliferation, metastasis, angiogenesis, and invasiveness in Triple Negative Breast Cancer. In addition, *Ziziphus mauritiana* has a cytotoxic effect against Triple Negative Breast Cancer with IC_{50} at a 365 µg/ml. This study successfully demonstrated that *Ziziphus mauritiana* has a cytotoxic effect on Triple Negative Breast Cancer and reveals the potential molecular mechanisms underlying the effect of *Ziziphus mauritiana* on Triple Negative Breast Cancer.

Keywords : *Ziziphus mauritiana*, Triple Negative Breast Cancer, network pharmacology

Paper ID : **AP52006**
Author(s) : **Candra Dwipayana Hamdin**
Affiliation(s) : Department of Pharmacy, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
Title : **Subchronic Toxicity of the Indonesian Natural Food Dyeing Agent *Tectona grandis* L.f.: Blood and Urine Parameters in Rats**

Abstract :

Tectona grandis L.f. (TG) leaf is traditionally used in Indonesia as a natural dyeing agent for linen, cloth, and various applications. The Indonesian paradigm of natural agent safety drives people to utilize TG leaf extract as a food colorant. Lack of understanding regarding the safety of TG extract potentially harms human health in the future. Although we have previously reported the acute toxicity of TG extract, longer-term examination is essential. Therefore, in this study, we investigated the subchronic toxicity of TG leaf extract in Wistar rats. The main method implemented in this study was modified from the OECD 407 toxicity test guidelines. Serial doses (0, 10, 20, and 40 mg/bw) of TG leaf extract were administered to at least 3 animals in each group of males or females. TG leaf extract was administered for 28 days and extended to 14 days for the satellite group before data collection. Qualitatively, TG extract did not affect the clinical behavior and macroscopic appearance of urine, including pH, color, precipitation, and urine blood spots. Our quantitation showed that TG leaf extract did not alter body weight or intake of water and food. Hematology analysis revealed that TG extract treatment for 28 days potentially decreased thrombosis value, serum glutamic pyruvic transaminase (SGPT) activity, and creatinine, while it increased bilirubin concentration. Interestingly, the satellite group (extended for 14 days) exhibited normal thrombosis, SGPT, creatinine, and bilirubin levels, indicating that the effects of TG leaf extract on these parameters after 28 days of treatment were reversible. The insignificant changes in parameters such as hemoglobin, erythrocytes, hematocrit, leucocytes, serum glutamic-oxaloacetic transaminase (SGOT), and bilirubin indicate that TG leaf extract is relatively safe.

Keywords : *Tectona grandis* L.f., subchronic, toxicity, natural, food, colorant

Paper ID : **AP53001**

Author(s) : **Cantika Prasna[1], Elza Ibrahim Auerkari[1*], Almasyifa Herlingga Rahmasari Amin[1], Roben Suhadi Pasaribu[1], Benso Sulijaya[2], Pertti Auerkari[3]**

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Title : **Antibacterial Effects of *Cyperus Rotundus* Rhizome Extract *In Vitro* as An Alternative Treatment to Periodontitis**

Abstract :

Background: As a herbal weed plant used in traditional medicine in various parts of the world, the nut grass, *Cyperus rotundus,* has been reported to demonstrate pharmacological effects, such as antimicrobial, cytotoxic, anti-inflammatory and other activities. This plant has been hence studied worldwide for the development of cost-effective pharmacological products. One of the diseases of interest in the oral environment is periodontal disease or periodontitis, which is largely driven by subgingival colonies of the bacteria *Porphyromonas gingivalis* and *Aggregatibacter actinomycetemcomita*ns. In addition, the bacteria *Streptococcus mutans* and *Staphylococcus aureus* are risk factors for the development of periodontitis. Colonization of these bacteria leads to periodontal inflammation, pocket formation, attachment loss, and loss of alveolar bone**. Objectives**: This study aimed to assess the antimicrobial effect of the ethanol extract of *C. rotundus* rhizome on the growth of the four bacteria associated with periodontitis. **Methods**: Ethanol extract of *C. rotundus* rhizome was prepared at concentrations of concentrations used in the tests were 12.5%, 6.25%, and 3.125%. The antibacterial effectiveness of *C. rotundus* rhizome extract on *A. actinomycetemcomitans P. gingivalis S. mutans* and *S. aureus* are tested for Minimum Inhibitory Concentration and Minimum Bactericidal Concentration. **Results**: The extract of *C. rotundus* rhizome in this study could kill *A. actinomycetemcomitans, P. gingivalis, S. aureus,* and *S. mutans* colonies at a concentration of 3.125%. The results indicate that the smallest inhibition percentage and MIC_{50} value of the ethanol extract of *C. rotundus* rhizome against *A. actinomycetemcomitans* was at a concentration of 6.25%, and against *P. gingivalis, S. aureus,* and *S. mutans* at a concentration of 3.125%. **Conclusion**: The results confirmed that the ethanol extract of *C. rotundus* rhizome contains alkaloids, saponins, tannins, phenolics, flavonoids, triterpenoids, and glycosides. The extract can inhibit the growth and kill the bacterial colonies of *A. actinomycetemcomitans, P. gingivalis, S. aureus,* and *S. mutans in vitro*. Further studies are needed to examine the effect of the extract of *C. rotundus* rhizome *in vivo*, also under long-term applications and with extracted active compounds to address cost efficiency.

Keywords : antibacterial, *Cyperus rotundus*, rhizome extract, periodontitis

Paper ID : **AP53002**
Author(s) : **Putri K. Zhara[1], Elza Ibrahim Auerkari[1*], Roben Suhadi Pasaribu[1], Antonius Winoto Suhartono[1], Pertti Auerkari[2]**
Affiliation(s) : [1]Department of Oral Biology, Faculty of Dentistry, University of Indonesia, Indonesia
[2]Department of Mechanical Engineering, School of Engineering, Aalto University, Espoo, Finland
Title : **Antibacterial Potency of Liquorice (*Clycyrrhiza glabra* L) Root Extract Againts Streptococcus Mutan and Streptococcus Sanguinis (In-Vitro)**

Abstract :

Background: Dental caries is a major challenge to oral health in Indonesia, with a prevalence of 88.8%. Caries is a multifactorial disease in which the early colonizers like *Streptococcus sanguinis* form a biofilm and the major causative pathogen, *Streptococcus mutans*, causes biofilm acidification that promotes dental damage of caries. To intervene such microbial damage, there is interest in developing alternative medicinal plant-based antibacterial agents. Liquorice is a native Indonesian medicinal plant that contains compounds such as glycyrrhizin, flavonoids, tannins and saponins with known antibacterial effects. **Objectives**: To analyze the in vitro antibacterial activity of ethanolic liquorice root extract against *S. mutans* and *S. sanguinis*. **Methods:** Ethanol (95%) extract was prepared of liquorice root by the maceration technique. Antibacterial activities of the extract against *S. mutans* and *S. sanguinis* were evaluated by broth dilution and testing for minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC). One-way ANOVA test was used to compare the effectiveness of the extract with that of chlorhexidine. **Results:** The ethanol extract of liquorice root had antibacterial activities on *S. mutans* with MIC and MBC of 6.25% and 50%, and on *S. sanguinis* with MIC and MBC of 25% and 50%, respectively. The statistical test showed that there was no significant difference within the two groups (p> 0.05). **Conclusion:** Ethanol extract of liquorice root has antibacterial activities against *S. mutans* and *S. sanguinis* and was comparable to Chlorhexidine so that it may has potential antibacterial agent against dental caries.

Keywords : dental caries, *Streptococcus mutan, Streptococcus sanguinis, Glycyrrhiza glabra* L

Paper ID	:	**AP53003**
Author(s)	:	**Devasya Nathania Kamilla[1], Elza Ibrahim Auerkari[1*], Roben Suhadi Pasaribu[1], Nurtamy Soedarsono, Pertti Auerkari[2]**
Affiliation(s)	:	[1]Department of Oral Biology, Faculty of Dentistry, University of Indonesia, Indonesia [2]Department of Mechanical Engineering, School of Engineering, Aalto University, Espoo, Finland
Title	:	**Antibacterial Potential of Ethanol Extract of *Plectranthus amboinicus* (Lour.) Spreng Againts Streptococcus mutans Serotype C and Streptococcus Sanguinis**

Abstract :

Background: Caries is the most prevalent disease in the world, and in Indonesia its prevalence is 88.8%. While the causative microbial agent of caries is Streptococcus mutans, Streptococcus sanguinis is a primary colonizer related to the formation of oral biofilms. Due to concerns on cost, access and side effects of the commercial solutions, many people still depend on plant-based medicinal alternatives. Plectranthus amboinicus (Lour.) Spreng is such a medicinal plant containing carvacrol and thymol that are known to have antibacterial effects. **Objectives**: To determine the effectiveness of P. amboinicus extract in inhibiting growth of and killing S. mutans and S. sanguinis. **Methods:** Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) were determined to characterize the antibacterial properties of the ethanol extract of P. amboinicus from extract concentrations of 50%, 25%, 12.5%, 6.25 %, and 3.125% (vol) against the two bacterial species. **Results:** MIC and MBC levels of the ethanol extract of P. amboinicus against S. mutans were 3.125% and 50%, respectively. The corresponding MIC and MBC levels of the extract against S. sanguinis were respectively 6.25% and 25%l test showed a significant difference between each treatment ($p < 0.05$). **Conclusion:** Ethanol extract of P. amboinicus can effectively inhibit growth of and kill S. mutans and S. sanguinis.

Keywords : *Plectranthus amboinicus* (Lour.) Spreng, *Streptococcus mutans, Streptococcus sanguinis*, MIC, MBC

Paper ID : **AP53004**
Author(s) : **Sri Anggarini Rasyid[1*], Sulfika Safira[2], Bai Athur Ridwan[3]**
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[2,3]Pharmacy Study Program, Faculty of Science and Technology, Mandala Waluya University, Kendari 93232, Southeast Sulawesi, Indonesia
Title : **Antihipercolesterolemia Activity Test of Ethanol Extract *Musa paradisiaca var. Sapientum*. L Peel on *Mus musculus***

Abstract :

Background: Cholesterol is one of the components of fat and is the main sterol in the human body. One of the plants that has potential as a natural medicine is ambonese banana peel (*Musa paradisiaca var. Sapientum* L.). The purpose of this study was to determine whether ethanol extract of ambonese banana peel (*musa acuminata Cavendish subgroub)* has an antihypercholesterol effect on male mice
Methods: This research is a laboratory analytical research where samples are extracted by maceration method with 96% ethanol solvent so that in the evaporator so that thick extract of ambo banana peel (*Musa paradisiaca var. Sapientum* L.) and antihypercholestrolemia activity test was carried out with test animals divided into 5 groups, namely Na-cmc negative control, simvastatin positive control, 100mg/kbb dose test group, 200mg/kgbb dose test group, and 400mg/kgbb dose test group data analysis using *one way* ANOVA and LSD test
Result: The results of the statitsic analysis test found that ambonese banana peel extract (*Musa paradisiaca var. Sapientum* L.*)* has activity as an antihypercholestrolemia, this is evidenced from the LSD data obtained there is a significant difference between negative control and other controls with a significant value of p< 0.05. There was no significant difference between the 400mg/kgbb dose test group compared to the positive control with a significant value of p<0.05. (0.04) differs significantly .
Conclusion: Based on the test of antihypercholesterol effect effective is a dose of 400mg / kgbb compared to simvastatin because the percent decrease is higher.

Keywords : cholesterol, ethanol extract, Ambon banana peel, mice, antihypercholesterolemia

Paper ID : **AP53006**

Author(s) : **Indira Rezka Nur Alima [1], Elza Ibrahim Auerkari[1]*, Almasyifa Herlingga Rahmasari Amin[1], Roben Suhadi Pasaribu[1], Pertti Auerkari[2]**

Affiliation(s) : [1]Department of Oral Biology, Faculty of Dentistry, Universitas Indonesia, Jakarta, Indonesia
[2]Department of Mechanical Engineering, School of Engineering, Aalto University, Espoo, Finland

Title : **Minimum Inhibitory Concentration and Minimum Bactericidal Concentration of *Annona muricata* ethanolic leaf extract on *Porphyromonas gingivalis* (ATCC 33277) and *Streptococcus sanguinis* (ATCC 10556) (In-vitro)**

Abstract :

Background: Periodontitis is an oral disorder triggered by chronic inflammation, and a major cause of human tooth loss. *Porphyromonas gingivalis* is a prominent component in the etiology of chronic periodontitis which forms a bacterial "red complex" with *Tannerella forsythia* and *Treponema denticola*. *P. gingivalis* can invade the periodontal tissue and lower the host-defense mechanisms by deregulating immune and inflammatory responses. In parallel, *Streptococcus sanguinis* represents oral commensal bacteria that act as pioneers for bacterial colonization in biofilm formation. A plant of traditional medicine to inhibit bacterial growth is soursop (*Annona muricata L*.) that contains active chemical compounds, namely alkaloids, phenolics, flavonoids, and tannins. **Objectives**: The study aimed to determine the antibacterial effectiveness of soursop leaf extract on *P. gingivalis* and *S. sanguinis*, and to compare the effect of the extract to that of the positive control of 0.2% chlorhexidine. **Methods:** Ethanol extract of soursop leaves was prepared at concentrations of 60, 50, 25, 12,5, 6,25, and 3,125 vol%. The antibacterial effectiveness of soursop leaf extract on *P. gingivalis* dan *S. sanguinis* is tested for Minimum Inhibitory Concentration and Minimum Bactericidal Concentration. **Results:** The observed MIC values of soursop leaf extract on *P. gingivalis* and *S. sanguinis* were 25% and 12,5%, while the MBC values were 50% and 60% (vol), respectively. There were significant differences in the inhibitory concentration of soursop leaf extract and positive control by 0,2% chlorhexidine against both *P. gingivalis* and *S. sanguinis* in post-hoc Tukey test ($p \leq 0.05$). **Conclusion:** Ethanol extract of soursop leaves can effectively inhibit and kill *P. gingivalis* and *S. sanguinis in vitro*.

Keywords : epigenetic, bone mineralization, gene therapy, CRISPR

Paper ID : **AP53007**
Author(s) : **Debie Rizqoh**
Affiliation(s) : Departement of Microbiology, Faculty of Medicine and Health Sciences, University of Bengkulu
Title : **Phyllosphere Bacteria of Andaliman (*Zanctoxylum acanthopodium* DC) as Potential Antimicrobial Compounds Source against Pathogenic Bacteria and Fungi**

Abstract :

Infectious diseases are diseases that can be life threatening if left untreated and can be caused by pathogenic microbes such as *Escherichia coli, Staphylococcus aureus Bacillus subtilis* and *Candida albicans*. The irrational use of antimicrobials has caused many pathogenic microbes to adapt and become resistant to antimicrobials. Andaliman (*Zanthoxylum acanthopodium DC.)* and phylosphere bacteria are known to have antimicrobial activity due to the compounds they contain. This study aims to determine the antimicrobial potential of andaliman phyllosphere bacteria (*Z. acanthopodium DC*.) against *E. coli, S. aureus* and *B. subtilis* and *C. albicans.* This research was an experimental laboratory research with qualitative data collection methods. The antagonist test of the phylosphere bacterial isolates against *C. albicans, E. coli, S. aureus* and *B. subtilis* was carried out by using spot technique. The five best isolates identified molecularly based on 16s rRNA gene. Then, crude extract of potential phyllosphere bacteria of andaliman (*Zanthoxylum acanthopodium* DC.) was carried out secondary metabolite screening and MIC (Minimum Inhibitory Concentration) test with disc diffusion method. From the antagonist test results, 8 isolates inhibited the growth of *B. subtilis,* six of isolate inhibited the growth of *Staphylococcus aureus* and 4 isolates inhibited the growth of *C. albicans*. Pada hasil uji MIC didapatkan daya hambat terkecil dengan konsentrasi 70% pada isolat AF43 yang berukuran 15,79 mm yang masuk ke dalam kategori kuat terhadap bakteri *S. aureus* dan didapatkan juga hasil uji MIC pada konsentrasi 70% pada isolat AF43 yang berukuran 13,57 mm yang masuk ke dalam kategori kuat terhadap bakkteri *B. subtilis*. Ekstrak isolat AF43 menjadi isolat yang mempunyai daya hambat terjadap bakteri *S. aureus* dan *B. subtilis*, dimana konsentrasi 100% menghasilkan daya hambat terbesar, yaitu berukuran 17,2 mm terhadap bakteri *B. subtilis* dan 23,4 mm terhadap bakteri *S. aureus*. Based on the MIC test, the crude extract of andaliman phyllosphere bacteria AF50 has minimum inhibition against *C. albicans* fungus at concentrations of 80%. Meanwhile, the color test results showed the presence of saponin compounds and the GC-MS test confirmed the presence of antifungal compounds from the saponin group with a relative percentage of 20.4 %, namely the Bis (2-ethylhexyl) phthalate compound. Andaliman phyllosphere bacteria (*Z. acanthopodium DC*.) had an antimicrobial activity which could inhibit the growth of *S. aureus*, *B. subtilis* and *C. albicans*.

Keywords : andaliman (*Zanthoxylum acanthopodium DC*.), antimicrobial, phyllosphere bacteria, pathogen mirobes

Paper ID : **AP54001**
Author(s) : **Regia Desty Rakhmayanti**
Affiliation(s) : Departement of Pharmaceutical and Food Analysis, Health Polytechnic of Surakarta
Title : **Antibacterial Activity of Facial Toner Containing Pepper Betle (*Peperomia pellucida*) Leaves Extract Against *Propionibacterium acnes***

Abstract :

Peperomia pellucida L. Kunth or pepper elder is a herbal plant that can be used as a treatment for abscesses, acne, boils, and skin inflammation. Pepper elder leaves contains chemical compounds including alkaloids, flavonoids, saponins, tannins, and triterpenoids which can inhibit the growth of *Propionibacterium acnes* bacteria. The content of pepper elder leaves extract be used as a refreshing toner, especially for dry and acne-prone skin. The purpose of this study was to determine the physical quality tests and antibacterial activity of facial toners with pepper elder leaves extract. Formulations was made with the addition of pepper elder leaves extract concentration of F0 (0%), FI (7.5%); FII (15%) and FIII (30%). This type of research is experimental research with a descriptive research design. The results of the organoleptic of F0 were clear and odorless while the FI, FII and FIII were brownish green, had a distinctive aroma of pepper elder leaves extract. Homogeneity test results was homogeneous of all formula. The result of pH test of F0 was 6.327 ± 0,005; FI was 5.344 ± 0,004; FII was 5.243 ± 0,003 and FIII was 5.067 ± 0,007. Viscosity test results F0 was 6,437 ± 0,046 cps; FI was 6,180 ± 0,020 cps; FII was 6,110 ± 0,010 and FII was 6,190 ± 0,026 cps. The results of the antibacterial activity of F0 was 0,00 ± 0,00 mm (no inhibition zone), FI was 7,37 ± 0,074 (moderate), FII was 13,35 ± 0,057 (strong), and FIII was 16,24 ± 0,050 (strong). The antibacterial activity of positive control (clindamycin) was 21.17 ± 0,042 mm (very strong). Based on the results of the physical quality test and antibacterial activity of the toner preparations that were carried out, all the formula meet the existing quality standards so the toner were safe to use. Toner with the strongest antibacterial activity were found in FIII with zone inhibition of 16,24 ± 0,050 (strong).

Keywords : facial toner, antibacterial activity, pepper betle, acnes

Paper ID : **AP54002**

Author(s) : **Jamilah Abbas, Vera Permatasari, Andini Sundowo, and Tjandrawati Mozef**

Affiliation(s) : Research Center for Pharmaceutical Ingredients and Tradisional Medicine, The National Research and Inovation Agency (BRIN). Tangerang Selatan. Indonesia

Title : **Chemical Constituent And Anticancer Activities of *Aglaia Faveolata* Leaf Extract**

Abstract :

Cancer is a big problem for health, because cancer can cause death, medicinal plants have the ability to prevent and treatments of cancer. In this study we used *Aglaia faveolata* leaves as medicinal plants. The these study, the in vitro anticancer activities was done using MCF-7 cells (breas cancer cell lines) for the hexane extract of Aglaia faveolata, Anticancer activities was evaluated with MTT standard and carried out by spectroscopic MTT staining against MCF7 with IC50 values of 72.4 ppm. The chemical constituent of the hexane fraction was done by using LCMS/MS. Our LCMS/MS revealed 11 known compound from LC-MS/MS namely **:** Lucianadehyde B (**1**): trametenolic acid (**2**), ambronal (**3**), β-D-Glucopyranoside,(3β)-ergost-7-en-3-yl (**4**), and 3β-16α-Dihydroxy-lanosta-8-24-dien-21-oic acid (**5**), 9,12-Dihydroxy-15-nona decenoic acic (**6**), 3β,6β,23-Tryhidroxy-urs-12-ene-28-oic acid (**7**), Lucialdehyde B (**8**), Trametenolic acid (**9**), Euxanthone (**10**) and 1,3,7-Trihydroxy-6-methyl-xanthone (**11**) were identified from the hexane soluble fraction of whole leaves dried material of *Aglaia faveolata.*

Keywords : *Agalaia faveolata*; anticancer activities; MCF-7 cell line; LC-MS/MS

Paper ID : **AP54004**
Author(s) : **Nanang Miftah Fajari[1], Muhammad Darwin Prenggono[2], Mohammad Rudiansyah[3], Hendra, Wana Nur'amin[4], Yulia Syarifa[5], Nuvita Hasrianti[5], Imelda Nita Saputri[6], Muhammad Irawan Afrianto[6], Annisa Halida Husna[6]**
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Title : **The Effect of Stingless Bee Honey on Wound Size in Diabetic Rat Models**

Abstract :

The prevalence of diabetic foot ulcer patients in Indonesia is approximately 15%, with 30% amputee, and 32% mortality rate. The available standard care needs to be combined with adjuvant therapy. Diabetic wound treatment using the moist principle is expected to accelerate healing. Stingless bee honey is also known for its moisturizing properties to avoid secondary infection, trigger angiogenesis, and make effective oxygen circulation. This study aimed to determine the effect of stingless bee honey from *Heterotrigona itama* on diabetic wound size in streptozotocin-induced rats (*Rattus norvegicus*). An experimental study was conducted on 13 diabetic wounds of rats treated with 3 types of therapy. Group 1 was treated with silver sulfadiazine; Group 2 was treated with pure stingless bee honey; and Group 3 was treated with stingless bee honey with 20% water content. The results showed that therapy with silver sulfadiazine (p-value = 0.006), pure stingless bee honey (p-value = 0.001), and stingless bee honey with 20% water content (p-value = 0.027) had significant effects on wound size reduction. Stingless bee honey with 20% water content and pure stingless bee honey reduced the wound size by 95.1% and 92.1%, respectively. They had better outcomes than the reduction of wound size treated with silver sulfadiazine (77.4%) although not statistically significant in their differences (p-value = 0.162). Stingless bee honey is a potential natural therapeutic agent for diabetic foot ulcers.

Keywords : diabetic foot, stingless bee honey, wound healing

Paper ID : **AP55002**
Author(s) : **Intani Quarta Lailaty**
Affiliation(s) : Research Center for Applied Botany, National Research and Innovation Agency (BRIN), Cibinong, Bogor 16911, Indonesia
Title : **Antibacterial Potential Evaluation of the Plant Collections from the Family of Rutaceae and Rosaceae in Cibodas Botanic Gardens, West Java, Indonesia**

Abstract :

Plants produce a variety of bioactive compounds with numerous biological activities, including antibacterial properties. The potential of plant extracts possessing antibacterial properties can be further developed as raw materials for drugs and cosmetics. In this study, antibacterial screening was conducted on three species of plants (*Rubus fraxinifolius*, *R. rosifolius*, and *Prunus cerasoides*) from the Rosaceae family and two species of plants (*Acronychia pedunculata* and *Zanthoxylum acanthopodium*) from the Rutaceae family, sourced from the Cibodas Botanic Gardens collection in West Java. The antibacterial assay was performed using the disc diffusion method. The bacterial isolates tested included *Pseudomonas aeruginosa*, *Staphylococcus aureus*, and *Staphylococcus epidermidis*. Plant descriptions and antibacterial compounds were supported by literature data. The results revealed that the ethanol extract of *Acronychia pedunculata* (Rutaceae) leaves exhibited the highest antibacterial activity compared to other species, followed by *Rubus rosifolius* (Rosaceae). Conversely, *R. fraxinifolius* leaf shoot extract demonstrated the lowest antibacterial activity based on tests against the three bacteria. Overall, all extracts produced the largest inhibition zone diameter against *S. epidermidis*. The antibacterial activities of plant extracts from the Rosaceae and Rutaceae families are expected to be influenced by compounds from the phenol, flavonoid, and terpenoid groups. Further research is necessary to develop plant bioprospecting with antibacterial properties for pharmaceutical raw materials.

Keywords : antibacterial activity, bioprospecting, cibodas botanic gardens, rosaceae, rutaceae.

Paper ID : **AP55003**
Author(s) : **Zetryana Puteri Tachrim**
Affiliation(s) : Research Center for Pharmaceutical Ingredient and Traditional Medicine, National Research and Innovation Agency, Kawasan Sains Teknologi (KST) BJ Habibie, South Tangerang, Banten, 15314, Indonesia
Title : **Brine Shrimp Lethality Assay of Ethyl Cinnamates Synthesized by Microwave Irradiation of Cinnamic Acids with Ethyl Acetate**

Abstract :

The simple and low-cost bioassay of brine shrimp lethality assay can be used to examine the toxicity effect of potential drugs. Ethyl *p*-methoxycinnamate is a major compound that can be isolated from the rhizome of *Kaempferia galanga* in which suggested by the study on the structure-activity relationship that its ethyl ester is the most important functional group contributing into the anti-inflammatory activity. In general, the synthesis of this typical ethyl ester of cinnamic acids are derived from the reaction of ethanol and cinnamic acid under reflux with the contribution of acid as catalyst. In this study, selected cinnamic acid derivatives are willing to subject into the microwave irradiation-guided ethyl esterification by using ethyl acetate and sulfuric acid. The yield of the products of ethyl cinnamates are moderate and ethyl *p*-chloro cinnamate showed highest toxicity level among the tested ethyl cinnamate derivatives with LC50 of 1.29 µg/mL.

Keywords : microwave irradiation, ethyl cinnamates, brine shrimp lethality, cinnamic acids

Paper ID : **AP55004**
Author(s) : **Elsera Br Tarigan[1], Erwahyuni Endang Prabandari[2], Danang Waluyo[2], Muhammad Ilyas[3], Partomuan Simanjuntak[1], Andria Agusta[1]**

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Title : **Exploring the Bioactive Metabolites with Anti-Malarial Properties Derived from Endophytic Microbial Resources Indigenous to Indonesia**

Abstract :

Malaria is an illness that arises from parasitic infection, for which a consistently effective treatment is currently lacking due to the presence of partial resistance. Hence, the identification of novel compounds exhibiting diverse mechanisms of activity is imperative for the identification of potential anti-malarial drug candidates derived from alternative sources like endophytic microorganisms. The primary objective of this study is to evaluate endophytes originating from various medicinal plants and extract compounds capable of serving as anti-malarial agents. The screening process involves the utilization of PfDHODH. There are 587 types of endophytes associated with the *Mitragyna speciosa* (37); *Soultalum album* L (15); *Phyllanthus urinaria* (4); *Myristica fragrans* (41); *Andrographis paniculata* (18); *Piper sarmentosum* (36); *Physalis angulata* L. (15) ; *Chilorantus officinalis* (5); *Staurogyne longata* (5); *C. Amboinicus* (19); *Nigelia sativa* (22); medicinal plants from Mandalika Lombok (35); medicinal plants from Bali (44); *Ziziphus mauritiana* (50); *Artemisia annua* (8); *Artemisia vulgaris* (13); *Uncaria Gambir* (74); *Zingiberaceae* (95); *Piper nigrum* (21); *Kaempferia parviflora* ((26); and *Murraya koenigii* (4). The analyzed conducted by using a 96-well plate yielded a z factor of 0.92, indicating minimal variability in repeatability. Three specific endophytes have exhibited the potential to possess anti-malarial properties through the inhibition of PfDHODH (Plasmodium falciparum dihidroorotat dehydrogenase). These endophytes include *Phyllosticta s*p (associated to *Mitragyna speciosa*), *Hypomycetes* (associated with *Physalis angulata* L), and *Fusarium sp* (associated to *Hornstedtia scyphifera*). The respective levels of inhibition of PfDHODH enzyme activity were measured at 54.52%, 51.53%, and 66.37%. The compounds identified through LCMSQtof analysis of Fusarium sp endophytes were Sunitinib and (9E)-N,N-Diisopropyl-9-octadecenamide. Similarly, in Hypomycetes, the compounds identified were N,N-Diheptyl-2-methylpropanamide and sanguinarine.

Keywords : PfDHODH, medicinal plants, zoonoses

Paper ID : **AP55005**
Author(s) : **Amelia Febriani**
Affiliation(s) : Institut Sains dan Teknologi Nasional
Title : **Exploring the Antibacterial Potential of Water Hyacinth (*Eichhornia* (Mart.) Solm) Against *Staphylococcus epidermis* and *Propionibacterium acnes*.**

Abstract :

Water hyacinth (*Eichhornia crassipes* (Mart.) Solm)) contains several active compounds such as saponins, flavonoids, polyphenols, and alkaloids, which exhibit antibacterial properties. These active compounds can also serve as antipyretics, anti-inflammatories, and diuretics. This study aimed to assess the antibacterial activity of a 70% ethanolic extract of water hyacinth (*Eichhornia crassipes* (Mart.) Solm) against *Staphylococcus epidermis* and *Propionibacterium acnes*. The solid diffusion method was employed to determine the minimum inhibition diameter, using tetracycline as a positive control and 10% DMSO as a negative control. The findings revealed that the 70% ethanol extract of water hyacinth inhibited *Staphylococcus epidermis* at concentrations of 25% (10.58 mm), 50% (11.41 mm), 75% (12.43 mm), and 100% (14.43 mm), where as in *Propionibacterium acnes*, the extract exhibited inhibition diameters of 11.19 mm (25%), 11.44 mm (50%), 14.51 mm (75%), and 19.37 mm (100%). Notably, our results demonstrate significant inhibition zones against both bacterial strains across varying extract concentrations. This research sheds light on the untapped potential of water hyacinth as a natural source of antibacterial agents, offering novel insights for pharmaceutical and therapeutic applications

Keywords : water hyacinth (*Eichhornia crassipes*) antibacteria, *Staphylococcus epidermidis*, *Propionibacterium acnes*

Paper ID : **AP55006**
Author(s) : **Stefanie Sugiarto[1], Novita Ariani [2], Elvina Dhiaful Iftitah[1], Galuh Widiyarti[3*]**
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[2]Research Center for Chemistry, National Research and Innovation Agency (BRIN) Puspiptek, South Tangerang, Indonesia
[3]Research Center for Pharmaceutical Ingredients and Traditional Medicine, BRIN, Puspiptek, South Tangerang, Indonesia
Title : **Study of the Temperature and Molarity Ratio Effects in the Geraniol Esterification and Testing Its Antibacterial Activity**

Abstract :

This study modified the molarity ratio of geraniol to isobutyric acid (1:1, 1:1.1, and 1:1.3) and temperature (RT, 40°C, 60°C, and 80°C) in the synthesis of geranyl isobutyrate ester using 5% (w/w) NaOH as a base catalyst. The antimicrobial activity was tested against both gram-positive and gram-negative bacteria. Ester products were separated and purified using column chromatography; and were identified using Fourier Transform Infrared Spectroscopy (FTIR) and Gas Chromatography-Mass Spectrometry (GCMS). The antimicrobial activity was assessed using the disk diffusion method. The results showed that the esterification product with a 1:1.1 molar ratio, at 80°C had the best separation based on thin-layer chromatography (TLC) and antimicrobial properties. GCMS analysis of the purified product revealed five compound peaks, with geranyl isobutyrate at 2.77% (R_T = 13.376 minutes). FTIR confirmed the presence of C=O ester carbonyl groups at 1717.82 cm^{-1} and C-O groups at 1080.37 cm^{-1}. Antimicrobial tests showed inhibition zones on the gram positive bacteria of 18.33±2.62 mm for *Bacillus subtilis* and 15.67±0.47 mm for *Staphylococcus aureus*; and against gram negative bacteria of 10.67±0.47 mm for *Pseudomonas aeruginosa* and 16.67±2.36 mm for *Escherichia coli*.

Keywords : geraniol, geranyl isobutyrate, disc diffusion test

TRACK 6: Vaccine and drug development

Paper ID	:	**ANP60001**
Author(s)	:	**Dodi Safari[1*], Yustinus Maladan[1], Rosantia Sarassari[1], Ratna Fathma Sari[1], Sarah Azhari Balqis[1], Ghina Athyah Wahid[1], Nuridha Audinia Safitri[1]**
Affiliation(s)	:	Eijkman Research Center for Molecular Biology, Gedung Widyasatwaloka, Cibinong Science Center, Bogor, Indonesia
Title	:	**Genome Analysis and Antibiotic Resistance Analysis of *Streptococcus pneumoniae* Prior Pneumococcal Vaccine Introduction in Indonesia**

Abstract :

*Streptococcus pneumoniae (*pneumococcus), a Gram-positive, lancet-shaped, and diplococcus bacteria is a leading cause of bacterial pneumonia, meningitis, and sepsis among children and elderly worldwide. This bacterium is a bacterial pathogen that colonizes the human nasopharynx and can migrate to sterile tissues/organs and cause infection. The 13-valent pneumococcal conjugate vaccine (PCV13) was introduced as a part of national program in 2022. Currently, a comprehensive genome analysis of pneumococcus for evaluation of the potential impact of PCVs in Indonesia has never been conducted in Indonesia. Here, we investigated genome analysis and characterization and antimicrobial susceptibility profile of pneumococcus isolates that were obtained from invasive- and carriage-specimens from different age groups and regions in Indonesia. The isolates were collected from 2012 to 2019. A total of 100 achieved isolates of *S. pneumoniae* culture results were extracted and proceeded to the next-generation sequencing using the TruSeq Nano DNA kit (Illumina NovaSeq6000 Platform). Raw genome data were analyzed using de novo assembly by ASA3P and Microscope server. Antibiotic susceptibility was performed by disk diffusion and broth microdilution methods. We found that the genome of pneumococcus features a circular chromosome with a genome size of around 2,000,000 bp and a GC content of around 39%. Twenty-nine of isolates were confirmed as serotype 19F followed by serotype 3, 23F, and 14. Majority of isolates were identified as strains of the PCV13 vaccine type. We identified that multidrug-resistant *S. pneumoniae* strains were dominated by serotype 19F. Among serotype 19F strains, ST1464 and ST271 were found as the predominant sequence type and Tn2010. For resistance to macrolides, Tn2010 was the most common transposon followed by Tn2009 and Tn5253. In Conclusion, these genome characterization of *S. pneumoniae* isolates were useful for analyzing the serotype, sequence type, virulence genes, antimicrobial resistance genes, and the impact of pneumococcal vaccination in Indonesia.

Keywords : *Streptococcus pneumoniae*; whole genome sequencing, Indonesia, Multidrug resistant

Paper ID : **AP61002**
Author(s) : **Rosario Trijuliamos Manalu[1], Zahir Thoriq[1*], Lia Puspitasari[2]**
Affiliation(s) : [1]Faculty of Pharmacy, Institut Sains dan Teknologi Nasional, Jakarta, Indonesia
[2]Departement of Pharmacy, Faculty of Mathematics and Natural Sciences, Universitas Sebelas Maret, Indonesia.
Title : **Multi-epitope Vaccine Design for Triple Negative Breast Cancer from TOP2A and MUC1 Proteins: Immunoinformatic Approach**

Abstract :

Triple negative breast cancer (TNBC) is an aggressive form of breast cancer that contributes to approximately 10 to 20 percent of all breast cancer cases. The absence of ER, PR, and HER2 receptors in this type of breast cancer results in fewer treatment options. One approach to address this is by creating a vaccine that can serve as immunotherapy. In TNBC, the proteins TOP2A and MUC1 play important roles, such as in the proliferation and spread of cancer cells. Additionally, with the advancement of technology, vaccine discovery and development can be conducted using immunoinformatic approaches. Therefore, this study aimed to design multi-epitope vaccine candidates for TNBC targeting the proteins TOP2A and MUC1. The multi-epitope vaccine candidates were designed using three epitopes each of MHC I, MHC II, and B cell from the TOP2A protein, and three epitopes each of MHC I and MHC II from the MUC1 protein. Additionally, an adjuvant in the form of ribosome protein 50S L7/L12 was added, and then all vaccine components were linked with linkers EAAAK, KK, GPGPG, and AAY. The obtained vaccine candidates were then analyzed for their physicochemical characteristics and docked with the MD2 co-receptor of TLR 4. The resulting multi-epitope vaccine showed favorable physicochemical characteristics desirable for a vaccine and could interact with the MD2 co-receptor of the TLR4 protein. The interaction formed between the resulting multi-epitope vaccine and MD2 co-receptor consists of hydrophobic interaction, hydrogen bonding, and salt bridges.

Keywords : MUC1, Multi-epitope, TNBC, TOP2A, vaccine

Paper ID : **AP63001**
Author(s) : **Ika Nurzijah**
Affiliation(s) : Faculty of Pharmacy, Universitas Muhammadiyah Purwokerto; School of Veterinary Medicine and Science, University of Nottingham; Rothamsted Research, UK.
Title : **An Evidence-Based Approach for The Generation of Newcastle Disease Universal Vaccines**

Abstract :

Newcastle disease virus (NDV) remains a significant challenge in the poultry industry due to its high genetic diversity and ability to evade immune responses. In this study, we aimed to explore the evolutionary dynamics of Class II NDV and identify potential targets within its glycoproteins for novel vaccines with broader geographical coverage.

Using comprehensive genomic data from online repositories, we analysed the impact of selection pressure on the evolution of Class II NDV. Specifically, we focused on the haemagglutinin neuraminidase (HN) and fusion (F) glycoproteins, crucial for neutralizing antibody recognition. These glycoproteins exhibit antigenic variability and selective pressure on their N-glycosylation sites, potentially leading to vaccine escape mutants.

From an evolutionary perspective, this study underlines the clinical importance of Class II NDV, particularly NDV glycoproteins, for disease control. Despite the virus's constant evolution and potential increase in virulence, our study identified promising molecular targets in NDV HN and F glycoproteins for seed vaccine development against global NDV variants.

However, the absence of virus neutralization data for NDV variants highlights the need for further in vitro and in vivo studies to accurately reflect the biological functions of these molecular targets. Future research should focus on utilizing site-directed mutagenesis to introduce amino acid substitutions in antigenic and glycosylation sites of NDV glycoproteins. Evaluation of the effects of such mutations on the efficacy of novel vaccines and NDV virulence is crucial for advancing vaccine development strategies.

Keywords : Newcastle disease virus, glycoproteins, class II, vaccines

Paper ID : **AP63002**
Author(s) : **Amelia Febriani, Teodhora, Saiful Bahri, Fahrijal**
Affiliation(s) : Department of Pharmacy, Institute of Science and Technology National, Jakarta, Indonesia
Title : **Antipyretic Evaluation of Combination of *Annona muricata* L. and *Carica papaya* L. in Mice**

Abstract :

Fever is a condition where the body experiences an increase above normal body temperature. Soursop leaves (*Annona muricata* L.) and papaya leaves (*Carica papaya* L.) contain chemical compounds including alkaloids, flavonoids, saponins, and tannins which are thought to have antipyretic potential. This research aims to determine secondary metabolite compounds in soursop leaves and papaya leaves, to determine the antipyretic activity of the combination of soursop leaf and papaya leaf extracts. A total of 20 healthy male ddY mice with a body weight of 20-30 g were divided into 5 treatments and 4 replications. The treatments were 3 treatment groups with dosage comparison (1: 1), comparison (1: 2), comparison (2: 1) of soursop leaves and papaya leaves, positive control ibuprofen 400mg and negative control CMC-Na 1% in fever induction using DPT vaccine administration volume is 0.1 cc (I,P). Observations were made by measuring the rectal temperature of mice using a digital thermometer before injection of the DPT vaccine or
normal temperature, 0 minutes (after DPT vaccine injection), 30, 60, 90, and 120 after administering the test material. The results of the study showed that giving a combination of papaya leaf and soursop leaf extract to 3 treatment groups was able to reduce the body temperature of mice. The ratio dose (1:2) provided the best reduction in reducing the body temperature of mice but was not significantly different from ibuprofen.

Keywords : antipyretic, *Annona muricata* L., *Carica papaya* L., fever

TRACK 7: Jamu and traditional medicine

Paper ID : **ANP70001**

Author(s) : **Trisnawati Mundijo[1], Yurnadi Hanafi Midoen[2], Franciscus D. Suyatna[3], Agung Eru Wibowo[4]**

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[2]Department of Medical Biology, Faculty of Medicine,, Universitas Indonesia, Jakarta, Indonesia.
[3]Department of Pharmacology and Teurapeutic , Faculty of Medicine, Universitas Indonesia, Jakarta, Indonesia.
[4]National Research and Innovation Agency (BRIN), Serpong, South Tanggerang, Indonesia.

Title : **Potential of Seahorse (*Hippocampus comes* L.) as A Candidate for Enhanced Fertility**

Abstract :

Fever is a condition where the body experiences an increase above normal body temperature. Soursop leaves (*Annona muricata* L.) and papaya leaves (*Carica papaya* L.) contain chemical compounds including alkaloids, flavonoids, saponins, and tannins which are thought to have antipyretic potential. This research aims to determine secondary metabolite compounds in soursop leaves and papaya leaves, to determine the antipyretic activity of the combination of soursop leaf and papaya leaf extracts. A total of 20 healthy male ddY mice with a body weight of 20-30 g were divided into 5 treatments and 4 replications. The treatments were 3 treatment groups with dosage comparison (1: 1), comparison (1: 2), comparison (2: 1) of soursop leaves and papaya leaves, positive control ibuprofen 400mg and negative control CMC-Na 1% in fever induction using DPT vaccine administration volume is 0.1 cc (I,P). Observations were made by measuring the rectal temperature of mice using a digital thermometer before injection of the DPT vaccine or
normal temperature, 0 minutes (after DPT vaccine injection), 30, 60, 90, and 120 after administering the test material. The results of the study showed that giving a combination of papaya leaf and soursop leaf extract to 3 treatment groups was able to reduce the body temperature of mice. The ratio dose (1:2) provided the best reduction in reducing the body temperature of mice but was not significantly different from ibuprofen.

Keywords : antipyretic, *Annona muricata* L., *Carica papaya* L., fever

Paper ID : **AP71001**
Author(s) : **Debora E Ekawijaya[1], Kevin P Kusnadi[1], Sri Rahayu[2], Wawan Sujarwo[3], Tjandrawati Mozef[4]**

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Title : **Antipyretic Evaluation of Combination of Annona muricata L. and Carica papaya L. in Mice**

Abstract :

Dysoxylum parasiticum (Osbeck) Kosterm, commonly known as *Epicharis parasitica* (locally referred to as Majegau in Bali), is an Indonesian indigenous plant belonging to the Meliaceae family, renowned for its rich secondary metabolites with diverse bioactivities. Traditionally, the bark has been used as an antiseptic to treat diarrhea, intestinal inflammation, urinary tract infections, and digestive problems. Some local people used Majegau to treat tumor diseases. This research aims to evaluate the potency of the plant to inhibit the growth of pathogenic bacteria and MCF-7 breast cancer cell line. The methodologies encompass (1) antimicrobial assessments utilizing microdilution assays against *Bacillus subtilis, Pseudomonas aeruginosa, Staphylococcus aureus,* and *Escherichia coli*, (2) cytotoxicity evaluations against MCF-7 breast cancer cells via the MTT (3-[4,5-dimethylthiazol-2-yl]-2,5-diphenyl tetrazolium bromide) assay, (3) phytochemical analyses incorporating total phenolic count (TPC) and total flavonoid count (TFC), and (4) antioxidant profiling utilizing the DPPH (2,2-diphenyl-1-picrylhydrazyl) assay, leveraging methanol extracts of *Dysoxylum parasiticum* leaves originating from Gianyar, Bali. The results show that *Dysoxylum parasiticum* exhibits significant antimicrobial efficacy against B. subtilis, S. aureus, and E. coli, demonstrating minimum inhibitory concentrations of 25 µg/ml, 6.25 µg/ml, and 25 µg/ml, respectively. Correspondingly, the minimum bactericidal concentrations are observed at 50 µg/ml, 25 µg/ml, and 100 µg/ml for the respective pathogens. Notably, the cytotoxicity analysis underscores its potency, displaying an IC50 value of 49.63 µg/ml against MCF-7 cells. Conversely, its antioxidant activity is relatively modest, evidenced by an IC50 of 504.53 µg/ml. Phytochemical analysis elucidates the presence of flavonoids at 40.53 mg QE/g of dry extract and phenols at 3.47 mg GAE/g of dry extract in *D. parasiticum*. In conclusion, *Dysoxylum parasiticum* demonstrates elevated antimicrobial efficacy against *Bacillus subtilis*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*, and *Escherichia coli*. Moreover, it exhibits promising anticancer potential against MCF-7 breast cancer cells.

Keywords : *Dysoxylum parasiticum*, antimicrobial, cytotoxicity, MCF-7 breast cancer cells, DPPH antioxydant

Paper ID : **AP71002**
Author(s) : **Laili Nailul Muna, Enni Riyan Hasni, Farhatul Uyun**
Affiliation(s) : Chemistry Education Study Program, UIN Sunan Kalijaga Yogyakarta
Title : **Antioxidant Activity Test of Kaffir Lime and Kaffir Lime Peel Waste and Analysis of Total Phenolic Content**

Abstract :

One of the body's protective tissues, the skin, is damaged as we age. This is caused by other things that come from outside the body due to oxidative stress. What can be done to prevent further oxidative stress reactions is the use of antioxidants. One source of exogenous antioxidants is plants that have secondary metabolites of flavonoids and vitamin C. Plants that contain flavonoids and vitamin C are kaffir lime peel and lime peel. This study aims to determine the total phenolic content and antioxidant activity contained in kaffir lime and lime peel waste. The method used in this research is using DPPH method to measure antioxidant activity and folin ciocalteau method to determine the total phenolic content. The results of this study indicate that the measurement of antioxidant activity in the DPPH method using a spectophotmeter at lambda 515.5 nm is 72 µg / ml, while the measurement of total phenolic content with the folin ciocalteau method is obtained at 165mg / liter. Thus, the utilization of kaffir lime and lime peel waste is very good as a source of natural antioxidants in the body.

Keywords : waste, lime, kaffir lime, antioxidant, total phenolic

Paper ID : **AP71004**
Author(s) : **Hurip Pratomo[1], Sudibyo Supardi[2], Agung Eru Wibowo[2], Suharmiati[2], Ani Isnawati[2], Faqih Dwi Kurniawan[3]**

Affiliation(s) : [1]Biology Study Program, Universitas Terbuka
[2]Research Center for Medicinal Raw Materials and Traditional Medicine, BRIN
[3]Agricultural Quarantine Office of East Lombok

Title : **Characteristics of Communities Who Use Part of Medicinal Plants in Self Medication in Selong District, East Lombok**

Abstract :

Natural medicines or herbal medicines based on the manufacturer can be grouped into homemade herbal medicines, compound herbal medicines, and factory herbal medicine (registered herbal medicines). The aim of this research is to describe communities who use medicinal plants in their self-medication efforts in Selong District, East Lombok. The research design was cross-sectional with 96 adult residents who used herbal medicine in the last month in Selong District, East Lombok, who were randomly selected in stages (multistage random sampling) in May 2023. Data collection was carried out by interviews using questionnaires. respondents who are willing to sign informed consent. Data analysis was carried out with univariate and bivariate statistics using the chi square test. The research results showed that the largest percentage of respondents used homemade herbal medicine in the form of medicinal plants 54.2% of the total herbal medicine users. The largest percentage of respondents use ginger, curcuma and aromatic ginger to maintain health, in chopped form (71.2%), by boiling it first (78.7%), to health promotion (78.7%), information sources from the environment social (relatives/neighbors) (73.1%), use it if there is a complaint (69.2%), the source is from the yard/garden/market (71.2%), the cost for single use is up to IDR 5,000 (51, 9%), felt the benefits of herbal medicine (90.4%) and did not feel the side effects of herbal medicine (96.2%). Respondents who used medicinal plants were more in the pre-elderly age group and above (> 45 years), female gender, married/divorced status, advanced education (high school or above), not working/housewife, and living in the village. The relationship between age, gender, marital status, education, employment and use of medicinal plants is not statistically significant ($p > 047$), but the relationship between location in rural areas and use of medicinal plants is statistically significant ($p < 0.047$).

Keywords : medicinal plants, homemade herbal medicine

Paper ID : **AP71005**
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Malaysia Minister of Higher Education, Fundamental Research Grant Scheme (FRGS 22-277-0886)
Title : **mySAKTI: A TMM Network Pharmacology Data Retrieval Methods For Formulation ID: MSS2515.F.02.02**

Abstract :

Across different medicinal practices globally, a wide range of traditional cough remedies can be found, which can be employed for the treatment of symptoms associated with COVID-19. These include Ayurvedic, Chinese, European, and Japanese materia medica. However, the same intended medicine prepared by Malay healers is rarely reported due to difficult data retrieval. To solve this issue, we have develop a database mySAKTI base on data retrieval methods. Our research involves the systematic gathering, organizing, indexing, classifying, and mapping of relevant medical information derived from the manuscript Kitab Tib: Ilmu perubatan Melayu (MS225). In addition, we employ data trustworthiness methods to ensure the trustworthiness of the data, thereby fostering trust in the database. Here, we will provide a detailed description of data retrieval pertaining to Formulation ID: MS225.02.02. This will encompass formulation information, ingredients, production methods, dosage, and route of administration. Based on the source, the formulation comprises six ingredients namely: cendana janggi (Pterocarpus Santalinus), marpusi (Carallia Brachiate), delima (Punica Granatum), sekati lima (Aganosma Marginata), padi (Oryza Sativus) and buah mata kerbau (not yet identified). The botanical information of each ingredient has been mapped with their active compound, gene, viral protein, host receptor, and relevant research. We anticipate mySAKTI database will contribute to the acceleration of development of medicine in combating communicable diseases as aggressive as covid-19. Additionally, our goal is to promote the utilization of mySAKTI as a dependable knowledge resource for researchers in their endeavors to advance pandemic preparedness pharmaceutical development.

Keywords : traditional malay medicine, cough, COVID-19, pharmacology network, manuscript data mining

Paper ID : **AP73002**
Author(s) : **Muhammad Hadi Saputra**
Affiliation(s) : Research Center for Ecology and Ethnobiology, BRIN
Title : **Inventory of Usada Bali Medicinal Plants on Mount Pohen, Bedugul Highland Bali**

Abstract :

Indonesia has a rich cultural heritage in traditional medicine, and Bali is a region with a comprehensive treatment system, as documented in Lontar Usada Bali. This manuscript contains traditional treatment methods and medicinal materials and holds a significant position in traditional medicine. The Lontar Usada Bali comprises 50,000 pieces, with no less than 491 species of medicinal plants, and various types of usada are divided based on the purpose of the treatment, each unique in its approach. The conversion of land on the island of Bali into agricultural areas and settlements, coupled with a shift in people's mindset towards relying heavily on modern medicine instead of traditional remedies, has posed a threat to the preservation of information on medicinal plant species and the conservation of the diverse Balinese Usada Plant species. Exploration of Usada Bali plant species is therefore required as part of attempts to preserve Usada knowledge. The survey on Mount Pohen was carried out in a 1 ha observation plot divided into 25 subplots of 20x20m size. A taxonomist in the field identified the species name, which was confirmed at the Hortus Botanicus Baliense Bali Botanical Gardens. A Balian, also known as Jero Mangku, identified the Usada Bali plant species. Results showed that as many as nine species of Usada medicinal plants are identified at Mount Pohen, which belongs to 9 families. These plants traditionally remedy various illnesses ranging from fever to sciatica pain. The plant parts vary from roots, leaves, fruits, and whole parts.

Keywords : botanical gardens, conservation, exploration, medicinal materials, traditional

Paper ID : **AP73003**
Author(s) : **Teodhora, Amelia Febriani*, Durroh**
Affiliation(s) : Department of Pharmacy, Institute of Science and Technology National, Jakarta, Indonesia
Title : **Pharmacological Analysis of Crescentia Cujete L Tea on Antidiabetic and Diuretic Effects in Rats**

Abstract :

Maja fruit (*Crescentia cujete* L) has been the focus of research regarding its therapeutic potential, especially in the treatment of diabetes mellitus. Maja fruit flesh contains secondary metabolite compounds including flavonoids, alkaloids, saponins, and tannins which are thought to play a role in helping reduce blood glucose levels. The research aimed to analyze the pharmacological effects of maja fruit herbal tea in reducing blood glucose levels in mice that had been induced with Streptozotocin 55 mg/kg BW - Nicotinamide 110 mg/kg BW as well as the diuresis effect caused by increased blood glucose levels. This research was carried out using male white rats of the *Sprague Dawley* strain which were divided into 5 groups. The negative control group was given 1% Na-CMC suspension, the positive control group was given Pioglitazone at a dose of 30 mg/KgBW, the maja fruit pulp herbal tea therapy group at doses of 200 mg/KgBW, 300 mg/KgBW, and 500 mg/KgBW, then carried out Statistical tests used SPSS with One Way ANOVA analysis and continued with post hoc analysis using Tukey. The results of the research showed that there were secondary metabolite compounds in the maja pulp powder. Within 14 days of therapy, a dose of Maja pulp herbal tea was obtained which could reduce blood sugar levels, namely in the therapy group 300 mg/KgBW and there was a decrease in urine volume during the 14 days of therapy. Herbal tea 300 mg/KgBW with positive control pioglitazone dose 30 mg/KgBW has different effectiveness.

Keywords : diabetes mellitus, diuresis, maja, pioglitazone

Paper ID : **AP74001**
Author(s) : **Aris Yulianto**
Affiliation(s) : Research Center for Preclinical and Clinical Medicine, Research Organization for Health, National Research and Innovation
Title : **Traditional Medicine Products Used in Healthcare Facilities: An Overview**

Abstract :

Traditional medicines are in great demand by physicians for the treatment of patients. This study aims to provide an overview of the use of traditional medicines in health care facilities and a selection of types of traditional medicines that can be recommended for development as phytopharmaca products. The research design is cross-sectional with quantitative and qualitative approaches using primary and secondary data. The research sample for primary data is health care facilities in the Central Java region that are known to have provided traditional medicine services. There were 9 hospitals and 59 health centres that provided data on the types of traditional medicines they provided. The secondary data used are data from the 2014, 2016 and 2018 herbal medicine research registries and the 2019 study of drug use in hospitals and clinics. In-depth interviews were conducted with experts to identify criteria in the selection of traditional medicines from upstream to downstream. Quantitative data analysis used scoring and weighting with the Analytic Hierarchy Process (AHP) application. There are 1,231 traditional medicines with distribution permit numbers (NIE) used in health facilities, and as many as 792 NIE products with repeated use, divided into 35 products. The selection of indications based on the needs in health facilities, 11 indications were obtained. The results of the selection of continuity of raw materials, obtained 13 products for 11 indications that can be proposed to be developed in Phytopharmaca.

Keywords : overview, traditional medicine product, healthcare facilities

Paper ID : **AP75001**
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[2]The School of Pharmacy, Faculty of Medicine and Health, The University of Sydney, Australia
Title : **Introducing Herbs Among Young Indonesians Within a School Setting: Findings From a Qualitative Study**

Abstract :

The adolescent population, defined by their age, is highly susceptible to the profound impact of the Internet of Things. As a result, youth have been decreasing their engagement in daily activities related to exploring nature, including interacting with their surrounding area. The medicinal plants that typically thrive in the vicinity of residential areas often go unnoticed by the younger generation of today. This problem occurs due to the increased prevalence of electronic gadget usage among today's youngsters, as opposed to engaging in outdoor activities. This occurrence is worrisome, given that teenagers are responsible for introducing and utilizing herbal medicines for future generations. Hence, the objective of this study is to explore an appropriate framework for health-promoting school initiatives that will impart herbal practices to the youth population in Indonesia. This study employs a qualitative methodology. Participants in the study included students, teachers, and parents of students, from whom qualitative data were collected. The Focused Group Discussion (FGD) method was employed for data collection. A total of four schools were selected, comprising of two elementary schools and two junior high schools, located in the Province of D.I. Yogyakarta. The participants consisted of teachers, students, and parents of students, with an equal representation from each of the four schools. The study instrument utilized was a Focus Group Discussion (FGD) guideline. The FGD results were transcribed exactly as said in both Indonesian and English languages. Thematic analysis was performed on the transcribed data. During the inductive analysis phase of this research, three fundamental concepts were identified from the perspectives of the three groups of participants involved in the study. The three fundamental notions are as follows: 1) a cooperative partnership between parents and the school; 2) the anticipated benefits and practical competencies that parents want students to acquire; 3) the pedagogical dynamics between teachers and students. The academic community at elementary and junior high schools in Indonesia, comprising pupils, teachers, and parents, considers the presence of medicinal plant gardens in schools as a valuable method for introducing kids to medicinal plants at an early stage. Medicinal plant gardens in schools can be utilized for entrepreneurial purposes, fostering student activities that promote both entrepreneurial skills and scientific comprehension of ecological subjects.

Keywords : herbs, curriculum, health promotion, adolescent

TRACK 8: Emerging and re-emerging diseases

Paper ID : **ANP80001**

Author(s) : **Rina Isnawati[1,2*], Anna Lystia Poetranto [1], Nona Rahmaida Puetri[1], Setyo Adiningsih[1], Hana Apsari Pawestri[3]**

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[3]Health Development Policy Agency, Ministry of Health Indonesia

Title : **Analysis of Respiratory Tract Microbiome In Hospitalized Covid-19 Patients**

Abstract :

The effects of the coronavirus disease (COVID-19) range from minimal illness to death, but the reasons for these effects are still unclear, and there is still a lack of information about how COVID-19 and the human microbiome are related. Studying the role of the respiratory microbiota in COVID-19 is important because the respiratory microbiome is known to interact with the immune system, thereby contributing to clinical outcomes in chronic and acute respiratory diseases. We studied the respiratory bacterial microbiome of patients hospitalized for COVID-19. A cross-sectional study was conducted to characterize the respiratory tract microbial communities of 45 COVID-19 patients from oro-nasopharyngeal swab specimens using the targeted metagenomic 16S rRNA gene. Samples were collected for this study from hospitals in Palembang and DKI Jakarta. The results of community analysis on samples from hospitals in Jakarta identified the genera *Staphylococcus*, *Peptostreptococcus*, *Capnocytophaga*, *Porphyromonas*, *Microbacterium*, *Neisseria*, *Streptococcus*, *Prevotella*, *Veilonella*, and *Pseudomonas*, which were the bacterial genera that were identified the most. Meanwhile, in samples from hospitals in Palembang, the identified genera were *Gemella*, *Pseudomonas*, *Leptotrichia*, *Staphylococcus*, *Prevotella*, *Veilonella*, *Fusobacterium*, and *Haemophilus*, and the one that dominated the most was the *Streptococcus* genus. Knowing the differences in bacterial composition in COVID-19 patients between two locations could have major implications for health management. These findings can form the basis for further research and broader epidemiological surveys.

Keywords : COVID-19, bacterial, respiratory tract microbiome

Paper ID : **ANP80002**
Author(s) : **Velicia Irene Kesuma[1*], Dwi Purnama Sari[1], James Setyadi Handono [1], Agus Eka Darwinata[2]**
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[2]Department of Clinical Microbiology, Faculty of Medicine, Udayana University/ Prof. Dr. I. G. N. G Ngoerah General Hospital, Denpasar, Indonesia
Title : **An Emerging Problem of Carbapenem Resistant In *Klebsiella Pneumoniae* Isolated In A Tertiary Hospital Denpasar**

Abstract :

Klebsiella pneumoniae is a gram-negative, lactose-fermenting rod bacteria of the Enterobactericeae group that causes a variety of infections. One of them is Carbapenem-Resistant Enterobactericeae (CRE). According to the Centers for Disease Control (CDC), CRE pose a global antimicrobial resistance threat. CRE causes resistance to all classes of antimicrobial drugs which is a serious endpoint in the fight against bacterial infections in public health. These bacteria are also referred to as "super bacteria" because they are resistant to carbapenems and the infection spreads rapidly. This cross-sectional study was conducted at the Clinical Microbiology Laboratory of Prof. Dr. I.G.N.G Ngoerah Hospital, Denpasar. A total of 23,317 specimens were collected, from January 1, 2019 to December 31, 2023. Isolation and identification of Carbapenem-Resistant Enterobactericeae (CRE) bacteria in *Klebsiella pneumoniae* was detected with VITEK-2 Compact (BioMerieux). Then the data were analyzed using WHOnet 2020. In this study, a total of 3,041 *K. pneumoniae* isolates were obtained, 78 isolates were resistant to carbapenems. A total of 58% came from blood samples, 23% urine, 10% sputum, and 9% wound samples. The most CRE was obtained from samples in the age group of 18 to 64 years. The analysis showed that resistance to carbapenems is a significant problem in our hospital. Our findings highlight the importance of monitoring and controlling infections caused by carbapenem-resistant *K. pneumoniae*. Appropriate infection control strategies and judicious use of antibiotics are urgently needed to reduce the prevalence and impact of resistance to carbapenems in healthcare facilities.

Keywords : *Carbapenem Resistance Enterobactericeae*, Antibiotic, Carbapenem, Emerging problem

Paper ID : **ANP80003**
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Title : **Environmental Pollution and Human Microbial Community: A Scoping Review on Indonesian Health Status**

Abstract :

Humans are the sole cause of environmental problems from activities such as irresponsible use of land and water resources, and pollution from domestic, medical, and industrial waste. Nonetheless, human also suffers the consequences, their bonded interaction with the environment makes them easily disposed to environmentally-cause health problems such as respiratory, digestive, and skin diseases, exploded population of disease vectors and reservoirs, including microbial diseases and antimicrobial resistance. Microbial composition that exists among different ecosystems has a similar pattern to humans, none will have the same structure and external factors play some roles that shape the structure. We seek to find existing works related to environmental studies and human microbiome, particularly in Indonesia by utilizing Litmaps® software to generate correlated literature using the initial desired article. The initial article will be generated by Google Scholar search using the keywords: “microbe”; AND/OR “human”; AND/OR “environment”. To simplify the finding of the main topic and conclusion in the pre-analysis, we optimize the use of Elicit software and filter out the selected articles by Elicit’s findings. Further reading to find similarities and differences between research on filtered articles will be done manually to avoid limitations resulting from the software. An additional “Connected Map” will help to visualize how each article is cited by or citing other articles. This scoping review will discuss how the environment status with different levels of pollution and types of pollutants could change microbial communities either in the environment or in humans living nearby.

Keywords : environment, pollution, microbe, human, health

Paper ID : **ANP80004**
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Affiliation(s) : Doctoral Program in Faculty of Medicine, Hasanuddin University
Eijkman Research Center for Molecular Biology, National Research and Innovation Agency
Title : **Identification of Protection Gaps Against Anopheles Biting in Papua Province Through Malaria Risk Factor Assessment and Human Behavior Observation**

Abstract :

Malaria in eastern Indonesia, particularly in Papua Province, has remained high despite significant reductions and eliminations in other parts of the country. Malaria control activities implemented include early diagnosis and prompt treatment, the provision of long-lasting insecticide-treated nets (LLINs), and indoor residual spraying (IRS). A rapid entomological assessment, human behavior observation, and household survey were conducted in eight high malaria-endemic regencies to expedite malaria elimination in this region. The present study, with its focus on Papua Province, aims to identify and characterize gaps in protection against mosquito bites that may contribute to sustained transmission and persistently high endemicity. This study was conducted using unique and innovative methods, in parallel with a rapid entomologic assessment that included human landing catch (HLC) and indoor night resting of adult mosquitoes. The human behavioral observation was conducted using interviews with prepared questionnaires. Questions focused on temporal (the night) location (domestic or peri-domestic) and bed net usage, with other metadata collected. The household survey was conducted around households where mosquito samples were collected. The questionnaire also collected data on building structure materials, preventing mosquito bites, livestock, IRS coverage, and insecticide-treated nets (ITNs) usage. Analysis of the human behavior observation and malaria risk factor assessment in each regency identified several gaps in protection against mosquito biting indoors and outdoors, namely mosquito biting protection indoors and outdoors availability before sleeping, the absence of mosquito screens in the house, and the habit of going outdoor at night for a long time. The HLC revealed that mosquito bites occurred equally indoors and outdoors. The findings of this study are important and indicate that indoor protection against mosquito bites needs to be optimized to mitigate indoor malaria transmission. In contrast, the current malaria control activities still need to address outdoor mosquito bites. This study identifies several gaps in protection against indoor mosquito biting and the evidence for outdoor biting Anopheles in eight regencies in Papua. The evidence undermines current malaria control activities and alerts us to address the gaps in mosquito bite protection indoors and outdoors. Efforts to mitigate outdoor transmission, such as mosquito breeding site removal from dwelling areas through community-driven larval source management, are strongly recommended.

Keywords : human behavioral observation, gaps in protection against mosquito bites, malaria**, P**apua province

Paper ID : **ANP80005**
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[3]Plantation and Livestock Agency of West Kalimantan Province, Jl. Muhammad Hambal No. 3 Pontianak.

Title : **Tracking Duck Viral Hepatitis and Epidemiology of Other Waterfowl Diseases in West Kalimantan**

Abstract :

Several viruses cause illness in waterfowl (ducks and muscovy ducks), including Duck Viral Hepatitis (DVH), New Castle Disease (ND), and Avian Influenza (AI). Duck Viral Hepatitis (DVH) is an acute and contagious disease with a high mortality rate, caused by Duck hepatitis A virus (DHAV), and the DVH case has not been widely reported in Indonesia. A study on DVH disease in the country's border areas is critical as a preventive measure and early detection, given that DVH has been reported in Malaysia. In addition, the prevalence of Avian Influenza (AI) and Newcastle Diseases (ND) in the location must be considered to prevent the outbreak. The study was carried out in the border areas of West Kalimantan and Malaysia (Sambas, Bengkayang, and Sanggau regencies). The presence of the disease is detected by observing clinical symptoms, anatomical pathology (AP), histopathology supported by serology examination against DVH using the Elisa technique, and Hemagglutination Inhibition techniques for AI and ND diseases. The results showed that DVH was not detected in ducks or muscovy ducks at any age. On the other hand, serological evidence suggests that AI and ND have occurred in the region with antibody titer ranging from 1-5 log 2 and 1-6 log 2, respectively. However, the AP examination showed negative lesions. Histopathological examination revealed hemorrhagic in the intestines, bursa of Fabricius, liver, and brain. These are important as a preventive measure against DVH and consider routine vaccination against AI and ND diseases in ducks.

Keywords : avian influenza, duck viral hepatitis, newcastle disease, West Kalimantan

Paper ID : **AP85001-PSC**

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Title : **Influenza A and B Co-Infections in Early Covid-19 Patients: Preliminary Findings**

Abstract :

The emergence of the COVID-19 pandemic has posed significant challenges to global public health systems. Understanding the co-occurrence of respiratory viruses such as influenza A and B alongside SARS-CoV-2 is crucial for effective management and control strategies. This study investigates the prevalence of influenza A and B viruses among 1307 COVID-19 patients in East Java, Indonesia, during the initial phase of the pandemic. The co-circulation of influenza viruses alongside SARS-CoV-2 during the early stages of the COVID-19 pandemic poses challenges for differential diagnosis and patient management. Here, we present findings from a retrospective study conducted on 1307 swab samples from patients which collected at the onset of the pandemic of COVID-19 by Institute of Tropical Disease, Universitas Airlangga. Among them, 15.38% swab samples were previously tested positive for SARS-CoV-2, while 7.73% and 1.07% swab samples were positive for influenza A and B, respectively. Notably, 6% of SARS-CoV-2-positive patients concurrently exhibited influenza A infection. Intriguingly, no instances of co-infection were observed between influenza B and SARS-CoV-2. These findings underscore the importance of comprehensive surveillance strategies and highlight potential interactions between viral respiratory pathogens during public health emergencies. Further investigations are warranted to elucidate the implications of these co-infection patterns on disease severity, clinical outcomes, and public health interventions.

Keywords : COVID-19, co-infection, influenza, virus

Paper ID : **AP83001**
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[2]Department of Mathematics, Faculty of Mathematics and Natural Sciences, Universitas Syiah Kuala
Title : **Basic Reproduction Numbers Analysis in Tuberculosis Spread Model with Environmental and Habitual Influences**

Abstract :

Annually, the government's assessment of tuberculosis (TB) cases consistently fluctuates. The TB prevalence in various cities and districts is affected by the TB data from the preceding year. This study focuses on disease modeling and specifically examines the capacity to identify tuberculosis (TB) depending on the overall burden of TB. The objective of this research is to model the control of tuberculosis (TB) transmission and identify crucial elements that impede the realization of the optimal model utilizing the basic reproduction formulae. This paper employed the susceptible, exposed, infected, and recovered (SEIR) model to simulate the quantity of tuberculosis cases. Changes in individual status from one population to another in SEIR model are assumed to be influenced by at least one environmental or habitual factor. This study had 75 participants, referred to as interviewees, who were actively engaged in the tuberculosis (TB) program. These individuals were selected from five cities and districts located in Aceh Province. According to initial study findings, the percentage of populations exposed (E) and infected (I) differs across different cities due to environmental and behavioral variables. The SEIR model simulation integrates both elements, demonstrating that the stigma factor plays a crucial role in achieving optimal basic reproduction number. Another discovery is that habitual elements provide a barrier to attaining ideal figures in the population undergoing recovery (R). The examination of basic reproductive number indicates that both stigma and behavioral variables have a key role in determining the effectiveness of TB programs.

Keywords : disease modeling, stigma, TB burden, TB program, Aceh

Paper ID : **AP83002**
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Eijkman Research Center for Molecular Biology, National Research and Innovation Agency (BRIN), Cibinong, Indonesia.
Title : **Pyrethroid Susceptibility Status and Knockdown Resistance (*kdr*) Allele in *Anopheles punctulatus* Group in Keerom, Papua**

Abstract :

In recent years, malaria control programmes have successfully reduced cases worldwide, including in Indonesia. These include early diagnosis and prompt treatment of cases, prevention of human contact with mosquito vectors through the use of Long-Lasting Insecticidal Nets (LLINs), and indoor residual spraying (IRS). However, the emergence of insecticide-resistant strains of mosquitoes and the absence of an effective malaria vaccine have hampered current malaria control efforts. This study investigated the permethrin, pyrethroid resistance status, and target-site resistance L1014F/S alleles in the *Anopheles punctulatus* group population from Keerom, Papua, between Mei and July 2023. Larvae and adult Anopheles mosquitoes were collected from three sampling sites: Sanggaria, Ubiyau, and Pitewi villages. A pyrethroid, permethrin 0.75% susceptibility assay was conducted using a WHO bioassay to determine resistance status. The presence of a *kdr* allele in the *VGSC* gene associated with pyrethroid resistance was detected using PCR amplification and DNA sequencing of the amplicons. Anopheline species confirmation was conducted using ITS2 gene markers. The *Anopheles punctulatus* group resisted permethrin at 0.75% in all study sites. A total of 135 adult mosquito collections, including *An. koliensis*, *An. punctulatus*, and *An. peditaeniatus*, were analyzed. The presence of L1014S was detected among *An. koliensis* (0.87) and *An. punctulatus* (0.66), respectively. This study, a significant milestone in malaria vector control, revealed that *An. koliensis* and *An. punctulatus*, the primary malaria vectors in Papua, were resistant to phenotypic permethrin at 0.75%. The presence of L1014S underscores and genotypically suggests that pyrethroid resistance is becoming prevalent among the malaria vector population in Indonesia. The emergence of insecticide resistance in the *An. punctulatus* group is a crucial development, and these results underscore the urgent need for regular and rigorous monitoring of the susceptibility of malaria vectors to insecticides used in public health programs.

Keywords : *Kdr*, pyrethroid resistance, Anopheles, Papua

Paper ID : **AP84001**
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Title : **Update on Monkeypox Epidemiology and Clinical Features: A Systematic Review**

Abstract :

The recent global outbreak of monkeypox has underscored the critical need for an in-depth understanding of its epidemiological patterns and clinical manifestations. With confirmed cases spanning 89 countries, the disease's resemblance to other pox-like infections necessitates precise laboratory diagnostics for accurate identification and management. Despite the absence of a specific monkeypox treatment, this review aims to provide a systematic overview of the current knowledge on monkeypox epidemiology and clinical features, utilizing the PRISMA framework to analyze relevant literature from PubMed, Science Direct, and ProQuest databases.
Our analysis of 9 out of 14,652 articles published between 2017 and 2022 reveals critical insights into the disease's transmission dynamics, clinical presentations, and management strategies. The review highlights the importance of clinical vigilance for symptoms characteristic of monkeypox, particularly in patients with relevant exposure histories, to ensure timely diagnosis and initiation of supportive treatment protocols.
The findings emphasize a high prevalence of rash and genital ulcers among confirmed cases, illustrating the disease's significant dermatological impact. Diagnostic challenges due to clinical similarities with other diseases highlight the indispensability of PCR testing for confirmation. While the limited supply of tecovirimat presents challenges, its usage alongside empirical acyclovir and supportive care forms the cornerstone of current therapeutic strategies. This review also identifies key areas for future research, including the need for targeted therapies and vaccines, to better equip healthcare professionals in managing this emerging viral threat. The limitations of this study, primarily its English language and full-text article criteria, underscore the necessity for more inclusive research to fully understand monkeypox's global impact.

Keywords : monkeypox, epidemiology, clinical features, diagnosis, treatment, systematic review

TRACK 9: Digital health

Paper ID : **ANP90001**
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Title : **When Care Became A Choice: Citizens' Perspective in Doctor-Patient Relations On Telemedicine**

Abstract :

Telemedicine is a remote healthcare solution and that is also an effort to digitalize healthcare in the technology development era. The existence of telemedicine has increased access to health facilities that are tailored to the patient's abilities and even has the potential to change care from practice practice-centered model to a patient-centered model (Dent, 2006; Wijaya et al., 2022). This has led to a change in one's perspective in determining health care, resulting in a change in perspective about doctor-patient interaction. The view of who has the most right to determine health care, be it the patient, the doctor, or even the patient's family, will also affect the way a person views the body. Therefore, this paper will try to find out how people view care and what considerations are used that affect the final choice made in digital healthcare practices.
This ethnographic research uses in-depth interviews with people who have used telemedicine and literature studies to strengthen the analysis. Informants will be chosen by taking into account their background including gender, level of study, and their experience in conducting health care. This paper is expected to provide benefits for the development and implementation of digital health by considering the public as users, especially regarding their views on the doctor-patient relationship. This study contributes to the literature by deepening the knowledge of how citizens with different backgrounds perceive healthcare practices in digital health, particularly telemedicine.

Keywords : telemedicine, doctor-patient interaction, healthcare practice

Paper ID : **AP92001**
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Title : **Development and Fabrication of a Cost-Effective Vortex Mixer and Cooler for Biochemical Analysis**

Abstract :

Around 4 ° Celsius, it creates a stable and cold environment necessary for a variety of biochemical experiments, particularly those that need lower temperatures. The proposed technique will incorporate incubating and cooling systems into vortex mixers, providing a dependable and efficient solution for chemical laboratory applications that are typically expensive or difficult to obtain and use. This study introduces a new, cost-effective vortex mixer equipped with an integrated cooler to maintain the required temperature for operation. The design intends to be economical, constructed from affordable materials, and employ fundamental cooling methods. The tiered development process started with selecting appropriate materials and components, utilizing computer modeling to enhance thermal performance and fluid dynamics, and taking advantage of rapid prototyping methods to create prototypes. The prototypes were further assessed in actual chemical laboratory environments. The tests looked at how well the mixer-cooler kept the temperature range that was set while it was running all the time and how well it protected the sample from breaking down during a biochemical analysis. Because of its mixing capacity, our method consistently met the necessary criteria with an error margin of less than 0.5 degrees Celsius. This paper presents a practical approach for conducting biochemical analysis at controlled temperatures and proposes a paradigm for developing cost-effective laboratory equipment in the field. Future research will investigate additional cost reductions, scalability, and the feasibility of integrating automated temperature control systems.

Keywords : vortex mixer, cost-effective, cooler, chemical laboratory, biochemical analysis

Paper ID : **AP94001**

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Title : **Drug-Drug Interactions in Elderly Patients In A Renal Ward: A Single-Center Retrospective Study In Pakistan**

Abstract :

The increasing prevalence of kidney disease among the elderly people lead to increase in potential drug-drug interactions (pDDIs), especially given the widespread use of polypharmacy in this demographic. In terms of Pakistan, a resource limiting healthcare setting, there's a need to investigate drug-drug interactions among hospitalized elderly individuals with kidney disease. Thus, we conducted a retrospective observational study to investigate the prevalence and associated risk factors of drug-drug interactions. Set within Saidu Group of Teaching Hospital in Swat, Pakistan, from January to December 2021, our study focuses on a demographic of elderly patients aged 60 years and above, with a cohort of 43 individuals selected through consecutive sampling. Utilizing conventional paper-based records, data was screened and collected from the Patients Records Office. Drug interaction evaluation employed online tools such as Drugs.com and Medscape Drug Checker for their accessibility and suitability in resource-limited environments. Our analysis revealed that among the 43 elderly subjects, evenly distributed by gender, the mean age was 66.53 ± 7.68 years. 74.4% had comorbidities, and each patient was taking an average of 4.58 medications. 62.79% of them experienced one or more potential drug interactions as identified by Medscape, while 67.44% experienced such interactions according to Drugs.com. Notably, 15% of interactions were deemed high-risk by both the tools. Furthermore, regression analysis indicated higher risk of potential drug interaction with increasing number of prescribed medications (OR=4.515, p=0.033). In conclusion, a high prevalence of pDDIs was found in elderly patients with kidney diseases in Pakistan. Since majority of the patients had comorbidities that typically require the use of multiple medications, the likelihood of adverse reactions increases. Accurate prescriptions, a reliable electronic surveillance system, and the assistance of clinical pharmacists, is essential to mitigate the risk of potential drug-drug interactions (DDIs) and subsequent adverse drug events.

Keywords : drug-drug interactions, elderly patients, kidney disease, medscape, drugs.com

Paper ID : **AP94002**
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Title : **Enhancing Outpatient Diabetes Management: Digital Education Interventions for Effective Insulin Pen Use**

Abstract :

Diabetes mellitus (DM) is a global health challenge, with Indonesia ranking fifth worldwide, bearing over 10.7 million sufferers as of 2021 according to the recent data by International Diabetes Federation. With the rising prevalence of this long-term disease, insulin therapy usage is projected to increase from 516.1 million units in 2018 to an estimated 633.7 million by 2030, underscoring the critical need for adept insulin pen handling to meet glycemic control targets. This study specifically evaluates the proficiency of insulin pen use among diabetes outpatients at many private hospitals in the Special Region of Yogyakarta, Indonesia in addition to examining the impact of a digital education program, in the form "Diary Diabetes", on enhancing this skill. Conducted from October 2023 to January 2024, this study employed a pre-experimental one-group pretest-posttest design with 65 participants selected through a quota sampling. Utilizing a checklist to assess self-administration of insulin before and after the digital intervention, findings revealed substantial improvements: pre-intervention, only 29.2% of respondents demonstrated good insulin pen skills, which escalated to 100% post-intervention. Statistical analysis using the Wilcoxon Test confirmed a significant enhancement in insulin pen proficiency ($p < 0.05$). This study conclusively demonstrates that digital education significantly bolsters insulin pen usage skills among DM patients, highlighting its potential as a pivotal tool in diabetes management in resource-limited settings.

Keywords : diabetes, digital, education, health promotion, insulin pen, patient education

Paper ID : **AP95002**
Author(s) : **Taufik Iqbal Ramdhani**
Affiliation(s) : Research Center for Artificial Intelligence and Cyber Security, National Research and Innovation Agency
Title : **An Efficient Multi-Label Deep Learning Approach for Precision Face Skin Condition Identification**

Abstract :

Countless people worldwide are affected by face skin problems, including common ones such as acne and wrinkles, and even severe conditions like melasma and cysts. These conditions may show symptoms and visual signatures blends which make them difficult to diagnose by conventional methods that might be inconsistent or unscalable. However, this complexity can be unraveled using deep learning technology which can search for tiny patterns from a vast amount of data. Precise automated recognition of various types of skin diseases in one fell swoop is a major step toward personalized dermatology care that is also accessible to everyone. This work tackles the challenge of limited resources in developing countries through designing a new scheme for diagnosing twenty-two facial skin disease via multi-label classification approach. The system works on energy efficient pre-trained deep learning models like EfficientNetV2-B0, EfficientNet-B0, MobileNetV2, MobileNetV3 among others that are suitable for mobile platforms with low computation power. These architectures have been selected due to their small size and high-speed capability making them ideal for digital health real time applications, enhancing the precision of medical diagnostics. The dataset used for training includes 10,764 high-resolution images, each meticulously annotated with diverse skin conditions to reflect the diagnostic complexities encountered in clinical practice. Through extensive training and a robust ensemble method, the models demonstrate high accuracy in detecting and classifying a wide range of skin conditions effectively. Initial validation results underscore the system's capability to deliver quick, reliable, and precise diagnostics, showing promise for broadening the accessibility of expert dermatological services, particularly in underserved regions. This integration of artificial intelligence with digital health initiatives exemplifies a significant advancement in precision medicine, offering scalable solutions that enhance diagnostic access and efficiency across varied populations.

Keywords : face skin problems, deep learning, multi-label classification, efficientnet, mobilenet.

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