



BIOMEDICAL PHARMACY RESEARCH GROUP

“Striving for Cross Cutting-edge Research in Medicine”

The Biomedical Pharmacy Research Group is one of the research groups under the auspices of the Department of Pharmacy Practice, Faculty of Pharmacy, Universitas Airlangga. This research group focuses on exploring the pathophysiological mechanisms of a disease and discovering potential therapeutic agents and new therapeutic approaches. The current research themes of this group focuses on metabolic and neuropharmacological diseases such as Stroke/Brain Injury, High Fat Diet-induced Steatosis, Nicotine Addiction, Morphine-induced Constipation, Chemotherapy-induced Peripheral Neuropathy, Gastric Ulcer, and Depression.

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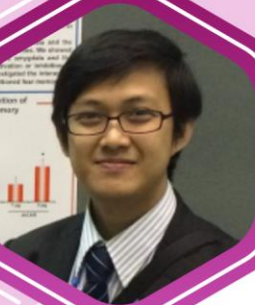




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RESEARCH TEAM





SELECTED PUBLICATIONS

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ON-GOING RESEARCH TOPICS



STROKE

Stroke causes neurological disorders due to brain cell death in conditions of vascular constriction or bleeding. Improvement of post-stroke conditions is still an important concern because it is closely related to the patient's quality of life. This research group focuses on deepening the pathophysiology of post-stroke neurologic disorders and potential therapeutic targets that are supportive in post-stroke recovery.



HIGH-FAT DIET-INDUCED STEATOSIS

In Non-Alcoholic Fatty Liver Disease, liver physiology is impaired due to the imbalance in lipid metabolism and lipotoxicity in the liver. The focus of this research is to study the process of molecular damage to hepatocytes and explore the potential of drug candidate compounds as well as the proposed mechanism of action.



NICOTINE ADDICTION

Addiction to nicotine is a paradigm that continues to develop and becomes a strategic health issue. The process of formation of dependence on this main component of cigarettes and the appropriate pharmacological intervention in overcoming it is an area of research that is deepened in this group.



MORPHINE-INDUCED CONSTIPATION

Constipation, which is a decrease in the frequency of bowel movements, becomes a disturbing health problem and can lead to bad consequences if not treated. Understanding the molecular concepts of acute and chronic constipation that involving various functional peptides and proteins in intestinal epithelial cells is the focus of further research in this group.



CHEMOTHERAPY-INDUCED PERIPHERAL NEUROPATHY

Peripheral neuropathy is a common ADR in cancer treatment using chemotherapy. Potential pharmacological agents as well as elucidation of the mechanism for the formation of plasticity sensing neurons in the brain and how to prevent them are interesting focuses in this group, considering that the pain sensor process involves not only peripheral nerves but also central perception in the brain.



GASTRIC ULCER

Gastric ulcers induced by drugs or stress still remain a mystery about the involvement of serotonergic signaling which not only affects centrally but also locally. This research group tries to open a new understanding of signaling pathways in the process of ulcers worsening and repair as well as opening up the potential for new therapeutic agents or drug repurposing.



DEPRESSION

Depression is a psychiatric disorder that is strongly associated with signaling plasticity in the brain. Research related to depression and signaling pathway that plays a role in the progression of this disease still needs to be explored. This group focuses on the mechanism of action of psychiatric drugs and phytochemical supplementation on functional changes in the neurotransmission system in the brain involving oxidative stress and changes in synaptic plasticity in certain brain areas.



OTHER AREAS WITHIN THE DRUG ACTIVITY TEST RESEARCH FRAMEWORK

Biomedical Pharmacy Research Groups also develop collaborative research with other researchers both from within the faculty and outside the faculty/university. In the future, researches that address global health problems in terms of pharmacology, physiology, and the development of new active pharmaceutical ingredients and repurposing drugs will be developed.

