





Research Area

Bioactive Compounds

This specialization aims to produce of bioactive compound. Bioactive compounds are capable of modulating metabolic processes and demonstrate positive properties such as antioxidant effect, inhibition of receptor activities, inhibition or induction of enzymes, and induction and inhibition of gene expression. Bioactive compounds consist of chemicals that are found in small volumes in plants and particular foods such as fruits, vegetables, nuts, oils and whole grains.

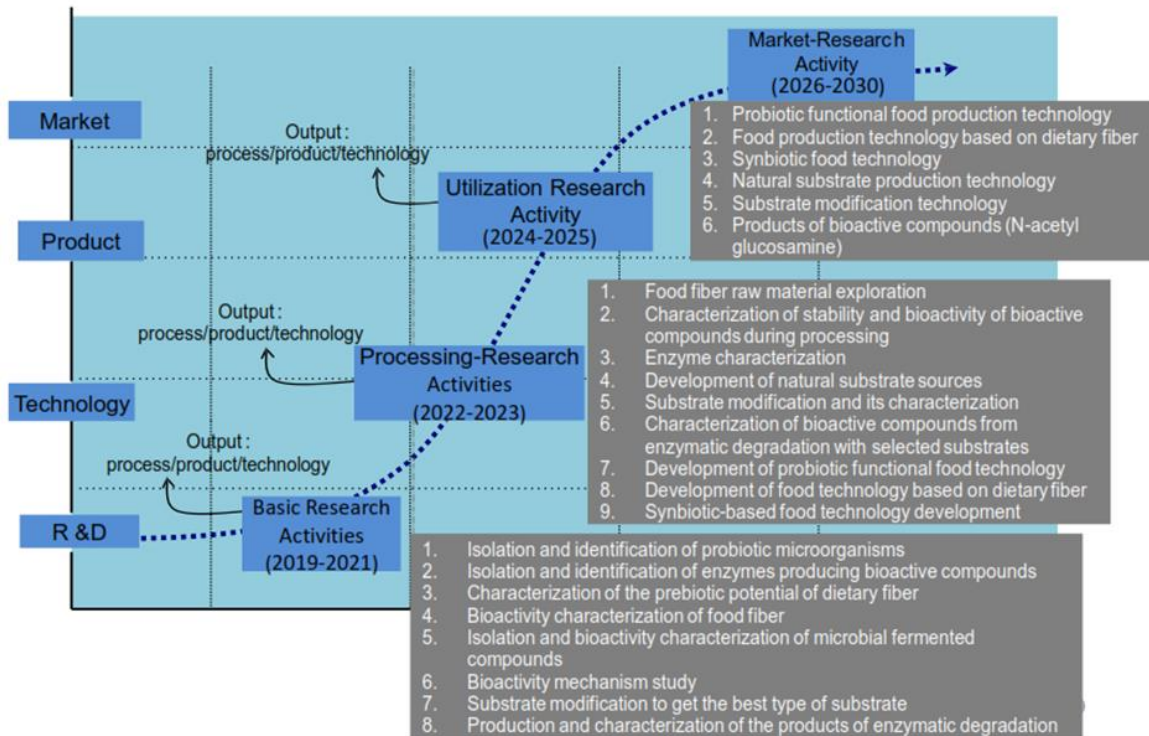
Personnel		
Team Research Area Bioactive Compounds		
	Prof. Dr. Rudiana Agustini	Research Area: Biochemistry-Microorganisms, isolation, extraction of enzymes and their applications.
	Dr. Nuniek Herdyastuti, M.Si.	Research Area: Proteins, enzymes and smart materials.
	Dr. Prima Retno Wikandari, M.Si.	Research Area: Development of fermented food.
	Mirwa A. Anggarani, S.Si., M.Si.	Research Area: Development of medicinal and supplement materials.



M. Nurrohman
Sidiq, S.Si., M.Sc.,
Ph.D.

Research Area:
Biochemistry, Regulatory Bioorganic Chemistry, Multi-omics, Bioinformatic

ROADMAP OF BIOCHEMICAL RESEARCH "BIOACTIVE PRODUCTION"



Research Project:

1. Utilization of Yeast Hydrolysate Enzymatic (YHE) Produced in Various Growth Media as a Medicine for Type 2 Diabetes Mellitus (DM) by Studying the Chromium (III) Content (DRPM, 2019)
2. Supplementation of Crude Extract of Antioxidant Scallop (*Solen* sp.) in Alloxan-Induced Type 2 Diabetes Mellitus Mice (PNBP UNESA, 2019)
3. Nanoencapsulation of black rice yeast extract as an anti-diabetes mellitus type 2 preparation (Covid-19 comorbid disorder) (DRPM, 2020)
4. Antioxidant Potential in Spiced Soy Milk to Improve the Immune System as an Anticipate Against Covid 19 (FMIPA UNESA, 2020)
5. Development of Aromatherapy Products Based on Shallots to Maintain Body Immunity in Efforts to Combating the Covid-19 Outbreak (UNESA, 2020)
6. The Effect of Processing on The Functional Value of Garlic and Black Garlic as Immune Boosters During the Pandemic (PNBP UNESA, 2021)
7. Bioprocess Technology for Producing Probiotic Drink Based on Gude Beans (*Cajanus Cajan* (L) Mill Sp) Fortificated with Blueberry Extract as an Antioxidant Source to Improve the Immune System (LPPM Unesa, 2022)
8. Nanotechnology of Black Rice-Yeast Extract as Anti Diabetes Mellitus (Anti-DM Type 2) using Nano-Encapsulation Method (DRPM, 2022)
9. Alpha-glucosidase Inhibitory Activity and Short Chain Fatty Acid Production of Single Garlic Pickles Fermented by *Lactobacillus plantarum* B1765 as Antidiabetic Functional Food (LPPM UNESA, 2022)
10. Phytochemical, Microbiological, and Organoleptic Study of Herbal-Based Probiotic Kombucha Tea as a Natural Anti-Inflammatory (LPPM UNESA, 2023)
11. Application of Red Onion Extract as a Natural Plant Growth Regulator in Turmeric Rhizome Farming (LPPM Unesa, 2023)
12. Exploration And Development of Fish Protein Hydrolysate Production from Lemuru Fish Canning Waste as a Nutrpharmacy for Arthritis Patients (LPPM Unesa, 2023)
13. Evaluation of Total Lactic Acid Bacteria and Short Chain Fatty Acids in the Small Intestine and Cecum of Rats Fed Single Garlic Pickle Extract with *Lactobacillus plantarum* B1765 Starter Culture (LPPM Unesa, 2023)
14. Potential of Fermented Synbiotic Single Garlic Pickles *Lactobacillus plantarum* B1765 Starter Culture as Anti-Diabetes in Vivo (LPPM UNESA, 2024)
15. Fabrication of Ag Nanoparticle Modified TiO₂/Chitosan Nanocomposite for Antibacterial and Photocatalyst Applications in Organic Dyes Degradation (LPPM Unesa, 2024)
16. Plasma Insulin and Glucagon Profile in Type II Diabetes Mellitus Rats with Single Garlic Pickle Feed Intervention Fermented with *Lactobacillus plantarum* B1765 Starter Culture (LPPM Unesa, 2024)
17. Potential of Fermented Gembili Juice (*Dioscorea esculenta*) Drink with *Lactobacillus plantarum* B1765 Starter Culture as an Antidiabetic Inhibitor of α -Glucosidase Enzyme (LPPM Unesa, 2024)
18. Exploration and Development of Fish Protein Hydrolysate Production from Lemuru Fish Canning Waste as Nutrifarmaka for Arthritis Patients (LPPM Unesa, 2024)
19. Lung Cancer Metabolomic Biomarker Identification Study using Machine Learning (LPPM Unesa, 2024)

Publication

No.	Year	Title	Name of Journal	Quartil	Category	URL/DOI
1	2019	The Composition of Water and Ash of Secang Wood's Simplicia and Secang Wood Herbal Drink Powder	Journal of Physics: Conference Series 1417(1)	Q4	Conference Proceedings	https://iopscience.iop.org/article/10.1088/1742-6596/1417/1/012033/pdf
2	2019	Characterization of yeast hydrolysate enzymatic (yhe) from yeast fermented in the variation of rice flour	Journal of Physics: Conference Series 1156(1)	Q4	Conference Proceedings	https://doi.org/10.1088/1742-6596/1156/1/012006
3	2019	The Chemical Properties Comparative of Yeast Hydrolysate Enzymatic (Yhe) From Yeast That Fermented in Rice Flour Variation	Rasayan Journal of Chemistry 12(4)	Q3	Article	http://dx.doi.org/10.31788/RJC.2019.1245314
4	2019	Potential Of Yeast Hydrolysate Enzymatic from Baker's Yeast Fermented in Several Rice Flours Medium as Anti-Diabetes Type 2	Rasayan Journal of Chemistry 12(4)	Q3	Article	http://dx.doi.org/10.31788/RJC.2019.1245411
5	2020	The encapsulation of metformin on chitosan matrix as diabetes mellitus drug slow release system	Rasayan Journal of Chemistry 13(1)	Q3	Article	http://dx.doi.org/10.31788/RJC.2020.1315551
6	2021	Chemical properties of black rice yeast extracts as pharmaceutical ingredients for the management of type 2 diabetes mellitus	Tropical Journal of Natural Product Research 5 (3)	Q3	Article	https://doi.org/10.26538/tjnpr/v5i3.13
7	2021	The utilization of black rice yeast and its physiological effects on mice (Mus musculus) which are exposed to type 2 diabetes mellitus	Rasayan Journal of Chemistry 14(3)	Q3	Article	https://doi.org/10.31788/RJC.2021.1436173
8	2021	Diversity of Chitinolytic Bacteria from Shrimp Farms and Their Antifungal Activity	Journal of Natural Science, Biology and Medicine, 12	Q4	Article	https://doi.org/10.4103/jnsbm.JNSBM_12_3_6
9	2022	Chemical Composition, Biochemical Activity of Black Rice Yeast Extract, and Their Potential as Anti-diabetic	Journal of Natural Science, Biology and Medicine, 13	Q4	Article	https://doi.org/10.4103/jnsbm.JNSBM_13_1_12