# PARALLEL SESSION

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<td>Chair: Dr. Pratiwi Puji Astuti, M.Si</td>
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<td>Chair: Riries Rulaningtyas, S.Si, M.Si</td>
<td>Chair: Dr. Soegianto S, M.Si</td>
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| **SESSION 2**                                          |                                                          |                                                          |                                                          |                                                          |
| Chair: Dr. Purkan, M.Si                                | Chair: Harsasi Setyawati, S.Si, M.Si                     | Chair: Yanuardi Raharjo, M.Sc                           | Chair: Dr. Khusnul Ain                                   | Chair: Dr. Prihartini Widiyanti, drg.M.Kes               |
| 15.15 – 15.30 ONPM 06                                   | OEGC 02                                                  | OAFC 01                                                  | OBME 06                                                  | OCPC 06                                                  |

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**Abstract ONPM**

*(Oral Natural Products and cell Culture)*
ANTIOXIDANT COMPOUNDS OF GAYAM SEED  
(Inocarpus fagiferus Fosb) TO PREVENT ATHEROSCLEROSIS

I MADE SUKADANA
Chemistry Department Faculty of Mathematic and Natural Sciences Udayana University

ABSTRACT

Gayam seed (Inocarpus fagiferus Fosb) is empirically has an ability to reduce oxidative stress diseases such as atherosclerosis. This study aims to prove the antioxidant compounds such as linoleic acid, ethyl linoleic, ethyl oleic, and homopterocarpine in ethanol extract of gayam seed (Inocarpus fagiferus Fosb) to prevent atherosclerosis through increase SOD-3 expression and decrease of MDA concentration plasma blood of Wistar rat with high cholesterol diet for 16 weeks.

This was an experimental study with randomized posttest only control group design. The samples were 25 Wistar rat, randomized into 5 treatment groups, i.e. group P₀ (negative control), group P₁ (positive control, feed high cholesterol diet), group P₂ (high cholesterol diet and ethanol extract in dose of 50 mg/kg bw), group P₃ (high cholesterol diet and ethanol extract in dose of 100 mg/kg bw), and group P₄ (high cholesterol diet and ethanol extract in dose of 150 mg/kg bw). After 16 weeks treatment, blood of the rats were driven for MDA and all rats were then euthanasia to obtain their aorta for immunohistochemistry analyzed to give expression of SOD-3 data. All of data was analyzed by Anova to obtain the treatment different toward control by statistically with significance at α =0.05.

The results showed that ethanol extracts of gayam seed (Inocarpus fagiferus Fosb) in doses of 50-150 mg/kg bw increase the expression of positive SOD-3 aorta endhotel cell and decrease the concentration of MDA significantly (p<0.05). The expression of positive SOD-3 aorta endhotel cell is marker endogenous antioxidant, therefore, the antioxidant compounds in ethanol extract of gayam seed can to prevent atherosclerosis disease through of SOD inducer mechanism.

Keywords: [Inocarpus fagiferus Fosb, antioxidants, SOD-3, MDA, atherosclerosis]
Certificate

Fifth International Conference and Workshops on Basic and Applied Sciences (ICOWOBAS 2015)

Dear Drs. I Made Sukadana, M.Si,

This certificate is awarded to you in recognition of your contribution as an Oral Presenter in the Fifth International Conference and Workshops on Basic and Applied Sciences. ICOWOBAS 2015, held on October 16th-17th, 2015, at Campus C UNAIR Surabaya, East Java, Indonesia.

Dean of the Faculty of Science and Technology
Universitas Airlangga

Program Chair
Dr. Moh. Yasin, M.Si.

Support and organized by Universitas Airlangga, Universiti Teknologi Malaysia, and Salahuddin University - Edbul
BACKGROUND
• Atherosclerotic disease is one of the major sources of morbidity and mortality of the population in developed and developing countries (Stocker and John, 2004; Nageswara et al., 2005).
• Indonesia, the recorded number of deaths caused by heart disease and atherosclerosis is increasing every year.

CAUSE: oxidized LDL-cholest by ROS (hypercholesterolemic)

BACKGROUND ...
• Ethanol extract contains linoleic acid, ethyl linoleic, ethyl oleic, and homopterocarpine compounds.
• Increase activity SOD, the level of HDL cholesterol
• Decrease the level of total cholesterol triglyceride LDL cholesterol in blood plasm of Wistar rat

potential to prevent atherosclerosis disease SOD-3 and MDA

OBJECTIVES
• Proving that the EtOH extract of gayam seed can prevent atherosclerosis through increasing expression of SOD-3 aortie endothelial in Wistar rat given high-cholesterol feed (hypercholesterolemia).

Proving that the EtOH extract of gayam seed can prevent atherosclerosis through reduction of blood malondialdehyde levels (MDA) of Wistar rats given high-cholesterol feed (hypercholesterolemia).

Research Methods
High-Cholesterol Feed

Inocarpus fagiferus Fosp
SEED
(potent as an antioxidant agent)

Randomized posttest only control group design with 5 groups.
Group P0: negative control (rat group with feed standard)
Group P1: positive control (rat group with feed high fat diet)
Group P2: rat group with feed high fat diet + ethanol extract dose 50 mg/kg bw
Group P3: rat group with feed high fat diet + ethanol extract dose 100 mg/kg bw
Group P4: rat group with feed high fat diet + ethanol extract dose 150 mg/kg bw

RESULTS
**The Average of MDA Concentration Plasma**

P0, P1, and P4 decreased MDA concentrations significantly compared to P5 as a result of the average difference between groups: P0 vs. P5, p<0.05; P1 vs. P5, p<0.05; P4 vs. P5, p<0.05; P2 vs. P1, p<0.05; P3 vs. P1, p<0.05; P3 vs. P4, p<0.05.

**The average expression of SOD-3 Positive**

Significant increase in the expression compared to P5 (p<0.05).

The average difference between groups: P4 vs. P1, p<0.05; P2 vs. P1, p<0.05; P3 vs. P1, p<0.05; P3 vs. P4, p<0.05.

**CONCLUSION**

- Antioxidant compounds of gayam seed to prevent atherosclerosis through decreases of MDA levels on Wistar rat hypercholesterolemia.
- Antioxidant compounds of gayam seed to prevent atherosclerosis through increases of the expression SOD-3 aortic endothelium on Wistar rat hypercholesterolemia.

**THANK YOU**

Matur Sukma
Om Shanti Shanti Shanti Om