

## The effect of polysaccharides peptides *Ganoderma lucidum* to intimal-media thickness and perivascular adipose tissue in type-2 diabetic model *Rattus norvegicus* strain wistar

D Sargowo, T A Wihastuti, F I Puspitasari, I Kharisma, O Handayani and L H Adrian  
University of Brawijaya, Indonesia

**Background:** Diabetes mellitus is a chronic disease and correlates to the future major adverse cardiovascular events. Perivascular Adipose Tissue (PVAT) is an important site of regulating vascular dysfunction in diabetes. Polysaccharides Peptides (PsP), extract of *Ganoderma lucidum*, is one of the antioxidant therapies which is currently developed as complimentary diabetes therapy. This study was conducted to determine effect of PsP as an antioxidant agent to inhibit the thickness of perivascular adipose tissue (PVAT) in diabetic model rats.

**Methods:** It was an experimental study with post-test only on control group design on male rats *Rattus norvegicus* aged 8 weeks. We administered high fat diet (HFD) and low-dose streptozocin (STZ) to make them diabetics, followed by PSP for 4 weeks. Samples were collected from rat aortic arch slice and then were read using light microscope.

**Results:** One-way ANOVA analysis showed that there is significant difference of vascular intimal-media thickness in at least two treated groups ( $p=0.000$ ). Post Hoc analysis with LSD showed that PsP with dose 150 mg/kgBW and 300 mg/kgBW can inhibit atherosclerotic process and reducing vascular intimal-media thickness into the condition of approaching normal group. Based on Pearson correlation test, there was a sufficiently strong correlation between

PVAT thickness in negative control group and diabetic model rats with PsP 150 mg/kgBW group.

**Conclusion:** Administration of PsP was proved to decrease the vascular intimal-media thickness diabetic model rats. The dose of 150 mg/kgBW of PsP is the optimal dose in decreasing the vascular intimal-media thickness in diabetic model rats. Besides, PsP also decreases the Perivascular Adipose Tissue (the PVAT) thickness and acts as an antioxidant.

### Speaker Biography

Djangan Sargowo, MD, PhD, FIHA, FACC, FESC, FAPSC, FASCC, FINASIM, is a Professor at the University of Brawijaya, and is board certified in Internal Medicine and Cardiovascular Disease. His clinical interests include management of ischemic heart disease, congestive heart failure, hypertension, diabetes mellitus, dyslipidemia and peripheral vascular disease. He received his MD from University of Gadjah Mada, Yogyakarta, Indonesia. He received training in Internal Medicine at Airlangga University and Cardiology at University of Indonesia. He received his PhD degree in Medicine from University of Airlangga. In the past, Barry served as Head of Cardiology and Vascular Department at Dr. Saiful Anwar General Hospital Malang and Director of Postgraduate Program at University of Brawijaya. He is currently a Fellow of Indonesian Heart Association, a Fellow of the American College of Cardiology, a Fellow of the European Society of Cardiology, a Fellow of Asia Pacific Society of Cardiology, a Fellow of ASEAN Federation of Cardiology, and a Fellow of Indonesian Society of Internal Medicine. He serves as Director of Brawijaya University Teaching Hospital, Chairman of Malang Molecular Biology Institute and as Chairman of Center for Degenerative Diseases, Brawijaya University.

e: djangan@yahoo.com

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