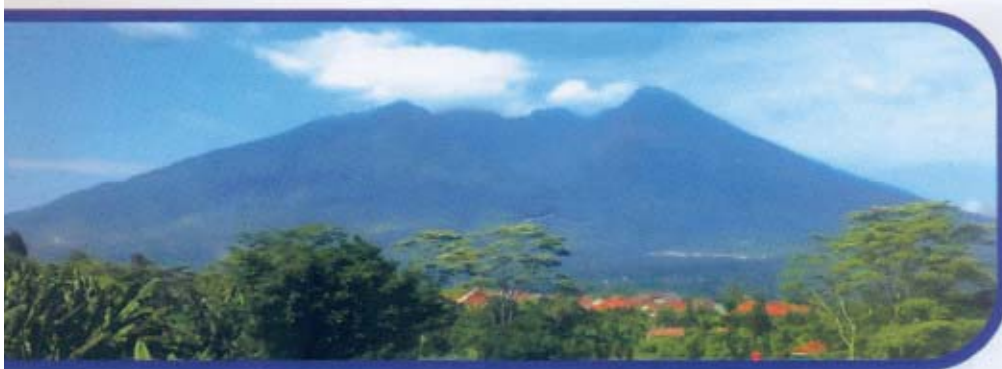




# BOOK OF ABSTRACTS



INTERNATIONAL SEMINAR OF INDONESIAN  
SOCIETY FOR MICROBIOLOGY  
(Pertemuan Ilmiah Tahunan PERMI)

*Harnessing the power of microbes for better food,  
agro-industry, health, and environment*

*Bogor, Indonesia  
4 - 7 October 2010*

## Opening Remark

Microbial diversity can be transformed into “biodiamond” (valuable biological resources) with proper tools such as biotechnology, bioinformatics, and advances in molecular biology. Exposure to the fast development in these studies would allow us to better understanding and utilization of microbes, in the field of bioenergy, management of greenhouse gases, isolation of beneficial microbes (probiotics) for human, animal, and plant health, ecosystem sustainability in agriculture, animal husbandry and aquaculture; as well as control and treatment of emerging diseases.

This seminar aims to provide a platform for international microbiologists, biotechnologists, and bioinformaticians, policy makers, and private sectors to interact and exchange the latest ideas and techniques in microbiology and biotechnology for exploration of largely untapped microbial resources, especially with respect to Asia. This meeting will also include special sessions that focus on Microbe-Macrobe interactions, Microbial utilization for bioenergy and mitigation of global climate changes, Bioinformatics, Microbial pathogenesis, and Trends in microbial diagnostics.

In addition, there will be a workshop that focuses on Bioprospecting of Microbial Endophytes; and an Update on Culture Collections, especially in the South East Asian Countries. These sessions will provide a better appreciation of microbial resources and its impact on our health, and sustainable agro-industrial production.

I am confident that you will find the program of the conference to be truly exciting, intellectually stimulating as well as providing important insights on the crucial way forward to appreciate the power of microbes.

A special welcome is extended to our students and younger scientists on whom the future study of microbial biodiversity and biotechnology depends. You have a great opportunity in this meeting to get to know the main leaders in this field and to network with your colleagues in the region. The need for international collaboration is of particularly paramount importance to optimally utilize microbial biodiversity.

*I hope you will find your experience in Bogor to be unique, satisfying, and enjoyable.*

With warmest welcome,

Antonius Suwanto  
Chairman  
Organizing Committee

## Organizing and Scientific Committee

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P.I-006

## PA0305 attenuates the virulence factors production of *Pseudomonas aeruginosa*

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*Pseudomonas aeruginosa* is a human opportunistic pathogen. It is known that many virulent factors production of the bacteria were modulated by acyl-homoserine lactones as signal molecules of quorum sensing system. Since acyl-homoserine lactone may also act directly as virulence factors in mammalian hosts, degradation of acyl-homoserine lactone may be interesting not only to stop the quorum sensing system, but also to reduce directly the virulence effects. Previous study proved that *P. aeruginosa* PA0305 protein is an acylase. It degraded the acyl-homoserine lactone from middle to long acyl-side chain of acyl-homoserine lactone, including N-3-oxo-dodecanoyl-homoserine lactone, one of the *P. aeruginosa* signal molecules.

The aim of this study is to investigate the quenching effect of *pa0305* to the quorum sensing system of *P. aeruginosa*.

The over-expression of *pa0305* gene reduced the accumulation of 3-oxo-C12-HSL signal molecule although the accumulation of the other one, N-butanoyl-homoserine lactone, was not changed. In addition, the elastolytic activity were reduced in *P. aeruginosa* wild type and complemented strains however the pyocyanin production was decreased during the logarithmic phase, not changed after reached the stationary phase. This study showed that the implementation of *pa0305* attenuated the production of some *P. aeruginosa* virulence factors which were quorum sensing-dependent genes.

**Keywords:** *Pseudomonas aeruginosa* PA0305, acyl-homoserine lactone acylase, elastase, pyocyanin

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