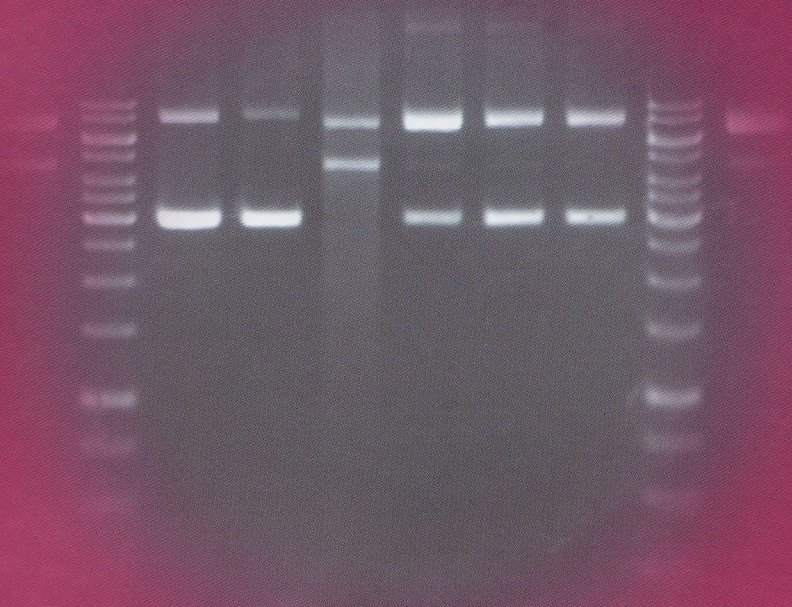


19th Intervarsity Biochemistry Seminar

2008

*“Science
Empowers
Change”*



22 March 2008

**PB Block,
Petaling Jaya Campus**

Universiti Tunku Abdul Rahman

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19th INTERVARSITY BIOCHEMISTRY SEMINAR

"SCIENCE EMPOWERS CHANGE"

22nd March 2008

Faculty of Engineering & Science,
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in collaboration with

The Malaysian Society for Biochemistry &
Molecular Biology

Venue:

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MICROBIAL POPULATION IN THE COELOMIC FLUIDS OF LOCAL SEA CUCUMBERS AND THEIR ANTIMICROBIAL-RESISTANCE CAPABILITIES

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Coelomic fluids from two local species of sea cucumber (Holothuroidea), *Stichopus chloronotus* (*gamat/talifan varietal hitam*) and *Holothuria leucospilota* (*timun laut/bat puntil*) were used in this study to isolate and identify the microbes inhabiting the coelomic fluids and subsequently to determine the antimicrobial-resistance capabilities of the microbes. *S. chloronotus*, among the well-known gamat, has been proven scientifically containing medicinal properties while *H. leucospilota* is known as the most abundant species in Malaysia. The native bacterial populations were isolated from the coelomic fluids of both species. Conventional total genomic DNA (tgDNA) extraction method using 2X CTAB buffer, Polymerase Chain Reaction (PCR) and phylogenetic analyses of 16S rRNA gene sequences were included as the main molecular methods. The molecular results showed the presence of eight genera of bacteria namely *Exiguobacterium*, *Vibrio*, *Stenotrophomonas*, *Pseudomonas*, *Bacillus*, *Micrococcus*, *Kytococcus* and an unidentified genus suspected as either *Kocuria* or *Rothia*. Through the filter disks diffusion technique, all bacteria were tested for their capabilities to resist several antimicrobial agents such as streptomycin, kanamycin and tetracycline. The strain from genus *Pseudomonas* suspected to be *P. alcaligenes* exhibited high resistance towards streptomycin. Another strain from genus *Stenotrophomonas* suspected to be *S. maltophilia* showed moderate resistance towards streptomycin and lower resistance towards kanamycin. Tetracycline inhibited the growth of all bacteria tested in this study. Furthermore, the lower diversity level of microbial populations in *S. chloronotus* compared to *H. leucospilota* might indicate its antimicrobial properties. Overall, the current findings have provided a better understanding on the microbial diversity and the antimicrobial-resistance capabilities of the isolated microbes in the coelomic fluids of *S. chloronotus* representing the local valuable *gamat* and the dominant species, *H. leucospilota*; that may contribute to the future development of Malaysian medical industries.

KEYWORDS: *Stichopus chloronotus*, *Holothuria leucospilota*, coelomic fluids, microbial population, phylogenetic analyses, antimicrobial-resistance capability.

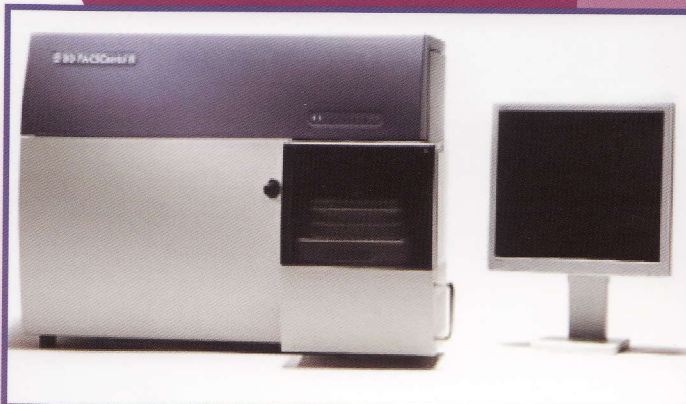


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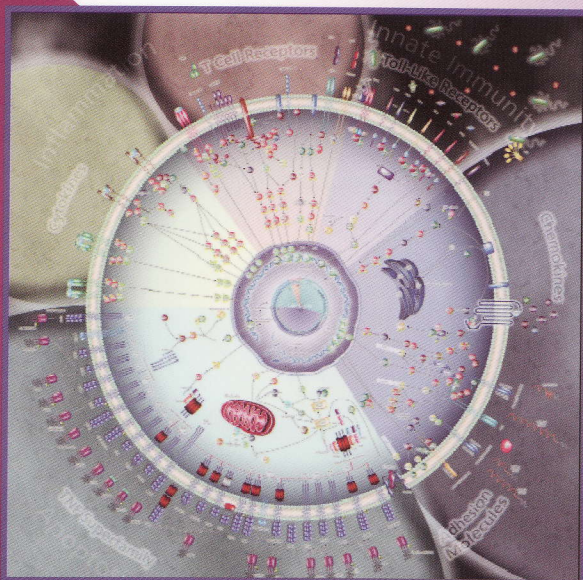
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