Genetic diversity of *S.typhi* P-9

Satheesh Nair, S. Puthucheary*, M. Altwegg+, T. Pang and the International Multicentre Study Group on the Molecular Epidemiology & Genetic Diversity of *S. typhi*#.

Abstrak

Telah dipelajari keragaman genetik pada gen spesifik isolat-isolat S. typhi *yang berasal dari berbagai daerah geografik yang berbeda: Malaysia, Indonesia, Papua New Guinea, India, Chili dan Switzerland, menggunakan berbagai pelacak gen (*Southern Blot hybridization*) setelah sebelumnya dilakukan digesti DNA genom memakai ensim restriksi. Ditemukan polimorfisme di antara isolat-isolat ini dengan menggunakan pelacak gen* fliC, groEL, *16S rRNA dan* rfbS. *Sebaliknya, terdapat homogenitas pola hibridisasi pada saat digunakan pelacak gen* ompC. *Selanjutnya dilakukan hibridisasi menggunakan pelacak gen terhadap* regio spacer *16S-23S rRNA,* viaB, invA *dan* cluster *gen patogenitas* Salmonella *spp, SPI dan SPII. Penelitian ini mengkonfimasi adanya keragaman genetik di antara isolat-isolat* S. typhi *baik pada tingkat DNA genom total maupun gen spesifik. Untuk selanjutnya merupakan hal yang menarik untuk menentukan adanya korelasi antara polimorfisme gen dan fungsi biologik, terutama yang berhubungan dengan virulensi.*

Abstract

We studied the genetic diversity within specific genes among S. typhi *isolates from different geographic regions using various gene probes (Southern blot hybridization) after restriction endonuclease digestion of genomic DNA. Isolates from Malaysia, Indonesia, Papua New Guinea, India, Chile and Switzerland were studied. Polymorphisms were detected among these isolates when* fliC, groEL, *16S rRNA and* rfbS *gene probes were used to probe restricted DNA. In contrast, homogeneity in hybridization pattern was observed when an* ompC *gene probe was used. Further testing was performed with gene probes for the 16S-23S rRNA spacer region,* viaB, invA, *and the pathogenicity island gene cluster for* Salmonella *spp, SPI and SPII. The present study confirms the significant genetic diversity among* S. typhi *isolates, not only at the total genomic DNA level, but at the level of specific genes. It would be of interest to determine any correlation between genetic polymorphisms and biological properties, especially those related to virulence.*

Inst. of Postgraduate Studies & Research and
**Dept. of Medical Microbiology University of Malaya, 50603 Kuala Lumpur, Malaysia*
+Dept. of Medical Microbiology, University of Zurich, Zurich, Switzerland
#R. Yassin, P. Sudarmono, E. Soewandojo, I. Handojo, M. Padmidewi, M. Passey, B. Combs, R. Chaudhry, A.M. Cordano. Gene probes generously provided by G. Dougan (fliC), E. Calva (ompC), and E. Groisman (SPI and SPII).