

MOLECULAR CHARACTERIZATION OF BACTERIA ISOLATED FROM WILD  
AND CULTURED OYSTER  
(*Crassostrea irradia*)

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**MOLECULAR CHARACTERIZATION OF BACTERIA ISOLATED FROM WILD  
AND CULTURED OYSTERS  
(*Crassostrea iredalei*)**

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## ABSTRACT

Food poisoning caused by bacteria infection through raw oyster consumption is a serious international debate. In this study, two major dominant bacteria present in wild and cultured oysters, *Aeromonas hydrophila* and *Shewanella putrefaciens*, were biochemically identified through commercial biochemical kit and genetically characterized using RAPD PCR. The oyster bacteria isolates were obtained from Langkawi and Setiu. Genomic similarity and genetic distance pattern was examined using NTSYS 2.0 j software; Jacob's coefficient and unweighted pair group method of clustering (UPGMA) was used to generate dendrogram. The RAPD amplification was performed using DNA thermal cycler. The RAPD-PCR products were run in agarose gel for electrophoresis. Isolates revealed a similarity between cultured and wild environmental condition but at a lower percentage of infection from cultured oysters. Genetic clustering from dendrogram revealed intra-species advantages of *S.putrefaciens* over *A.hydrophila* in dominating the host oyster.

## ABSTRAK

Keracunan makanan disebabkan oleh jangkitan bakteria melalui pemakanan tiram mentah merupakan masalah kesihatan yang menjadi isu antarabangsa. Dalam kajian ini, dua bakteria dominan yang utama, *Aeromonas hydrophila* dan *Shewanella putrefaciens* daripada tiram asli dan tiram ternakan dikaji dari segi biokimia menggunakan kit pengenalpastian biokimia dan pencirian genetik dengan menggunakan RAPD-PCR. Isolat bakteria daripada tiram di dapati dari Langkawi dan Setiu. Persamaan genetik dan peratusan jarak genetik dikaji menggunakan perisian NTSYS 2.0j; pemalar Jacob dan 'unweighted pair group method of clustering (UPGMA)' digunakan untuk membina dendrogram. Amplifikasi RAPD dijalankan menggunakan 'thermal cycler'. Hasil RAPD-PCR di gunakan untuk elektroforesis. Isolat menunjukkan persamaan genetik bakteria antara bakteria pada tiram kultur dan tiram liar tetapi pada kadar infeksi yang rendah pada tiram kultur. Kluster genetik pada dendrogram menunjukkan *S.putrefaciens* mempunyai kelebihan untuk menjangkit host tiram lebih tinggi berbanding *A. hydrophila*.