

Isolation, Characterization and Pathogenicity of a Bacterium that Causes Fin Rot, Gill Rot And Haemorrhagic Lesions on the Body Surface Leading to Systemic Bacteraemia in Koi Carp, *Cyprinus carpio* Linnaeus

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Koi carp (coloured *Cyprinus carpio*) is an introduced ornamental fish to Sri Lanka. Koi carps are bred and reared up to juvenile stage, mostly in earthen ponds in the dry zone of Sri Lanka. The juveniles are transported and maintained in temporary holding facilities of aquaria for sale. These fish are often susceptible to fin rot and gill rot resulting in a value reduction of stocks with significant mortalities. In this study, a bacterium was isolated from gill filaments of infected koi carps (with gill and fin rot). The isolated bacterium was characterized up to the Genus using standard microbiological and biochemical tests. Pathogenicity of the isolated bacterium was evaluated by injecting healthy juveniles of koi carp with 0.5 ml of the isolated bacterial suspension (1×10^6 CFU ml⁻¹). Koch's postulate was performed with the fish that showed gross clinical signs of systemic bacteraemia. The isolated bacterium was motile, rod shaped with spherical ends, Gram negative, oxidase positive and catalase positive. It produced acid and gas during glucose metabolism. Oxidative/ fermentative test (Huge and Leifson's medium) indicated that the bacterium could metabolize carbohydrates via both oxidative and fermentative pathways. The isolated bacterium belongs to the Genus *Aeromonas*. Mean percentage cumulative, mortality recorded for the fish (N= 10 x 4 for 4 replicates) challenged with isolated bacterium was significantly higher (82.5 % \pm 2.5; P < 0.05) than that recorded for control fish (17.5 % \pm 2.5) confirming the pathogenicity of the bacterium. Koch's postulate confirmed that the isolated bacterium was the causative agent of fin rot and gill rot leading to systemic bacteraemia in juvenile koi carps.