



Detection and identification of free-living amoeba from aquatic environment in Taiwan

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Free-living amoebae including *Acanthamoeba*, *Naegleria*, *Balamuthia* and *Hartmannella* are widely distributed in water, soil, and air. They can infect humans and can lead to serious illness even death. The aim of this study is to investigate the presence of free-living amoebae from aquatic environment in Taiwan, and to compare the differences between *Acanthamoeba* and *Naegleria* in different cultivation methods and conditions. In this study, we used molecular method with specific primers by Polymerase Chain Reaction (PCR) to amplify and to analyze the occurrence of free-living amoebae in aquatic environment. We collected 92 samples from environmental water in Taiwan. The results show that 33 water samples (35.9%) and 11 water samples (12.0%) were detected positive for *Acanthamoeba* and *Naegleria*, respectively. Furthermore, both *Acanthamoeba* and *Naegleria* can be cultured by PYG in 30°C, but not all free-living amoebae can be enriched and isolated by using storage-cultivation method. Due to the presence of *Acanthamoeba* and *Naegleria* in aquatic environment, the water quality monitoring should be more conscious.

Keywords: free-living amoebae; *Acanthamoeba*; *Naegleria*; *Balamuthia*; *Hartmannella*; PCR