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## Biochemical characterization of pathogenic free-living amoebae from different sources of water

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**Objectives:** Occurrence of heat-tolerant free-living amoebae in the Nile, tap and swimming-pool waters in the Nile Delta region, Egypt. Morpho-physiological, biochemical and molecular characterization of the isolated strains of free-living amoebae.

**Materials & Methods:** Cultivation of free-living amoebae on non-nutrient agar. Identification of the isolated strains based on the morphology of cyst and trophozoite forms as well as temperature and osmo-tolerance assays. Biochemical characterization of the isolated amoeba strains using quantitative and qualitative (SDS-PAGE) assays as well as qualitative determination of proteolytic activity in zymograph analysis.

**Results:** Potentially pathogenic free-living amoebae were isolated from all of the examined water sources. Colorimetric assays showed protease activity in heat-tolerant isolates of *Acanthamoeba* and *Naegleria*. All pathogenic isolates exhibited higher protease activity than non-pathogenic ones did. The zymographic protease assays showed various banding patterns for different strains of *Acanthamoeba* and *Naegleria*.

**Conclusion:** The incidence and prevalence of the pathogenic free-living amoebae in different populations using parasitological and biochemical diagnostic tools will provide baseline data against which the risk factors associated with waterborne transmission can be identified.

### Biography

Wafaa M Hikal has completed her PhD in Parasitology from Zoology Department, Ain Shams University, Egypt in 2010. She is an Assistant Professor in Biology Department. She has published more than 15 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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