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**TITLE**

# Isolation and molecular characterization of *Acanthamoeba* spp. from different environmental sources in Tabriz, northwest of Iran

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**Background:** The members of *Acanthamoeba* genus are among free-living amoeba (FLA) which could be a pathogenic parasite.The amoeba is a ubiquitous organism and has frequently isolated from wide variety of environmental samples.
**Materials andmethods:** In this cross sectional study different natural and man-made habitats were evaluated for the presence of *Acanthamoeba* in Tabriz cityfrom January to April 2016.Total of 74 samples were collected consisting of 16 dustsamples of the eye hospital environments, 9 samples of hospital tap water, 8 soil samples, and 41fixed and floating biofilm samples ofswimming pools and hot tubs. All samples were cultured and screened for the presence of theamoebacyst or trophozoite. For molecular characterization, PCR and sequencing were conducted based on the genus specific fragment of 18S ribosomal RNA gene.
**Results:** *Acanthamoeba*spp. were microscopically detected in 2 (12.5%) dust samples, 6 (75%) soil samples, and 8 (19.5%) swimming pool and hot tub samples.The amoeba was not found in tap water samples. Out of 16 isolates, 12 were shown expected band in PCR amplification. Sequence analysis of 11 samples showed that isolated *Acanthamoeba* belonged to the T4 (82%) and T3 (18%) genotypes.
**Conclusion:** Because of the high prevalence rate of potentially pathogenic T4 genotype, it is necessary to pay more attention to the public health importance of the *Acanthamoeba* in the study area.