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## Methanolic seed extracts of *Peganum harmala* exhibit potent activity against *Acanthamoeba castellanii* cysts and its encystment *in vitro*

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*Acanthamoeba castellanii* is an opportunistic protozoan pathogen that can cause fatal encephalitis involving the central nervous system and painful sight-threatening keratitis. Treatments for both infections are problematic because of the resistance of cysts to therapeutic agents. Here we evaluated *in vitro* strength of various folk plants extracts on *Acanthamoeba* cysts and its encystment mechanism. Our results revealed among all, methanolic seed extracts of *Peganum harmala* (ranging from 1 to 30 mg/ml) exhibited amoebicidal effects against *Acanthamoeba* cysts with complete destruction at maximum dose 30 mg/ml followed by *Melia azedarach* and *Ricinus communis*. Furthermore *Acanthamoeba* encystment was also inhibited with extract in concentration dependent manner with maximum inhibition at 2 mg/ml after 48 h co-incubation. In conclusion, it was demonstrated for the first time that methanolic seed extracts of *Peganum harmala* exhibited remarkable inhibition of *Acanthamoeba* cysts and encystment *in vitro* which could serve a potential new natural agent against *Acanthamoeba*. The future studies will be more focused on to identify the active ingredients and elucidation of the mechanism of action of the effective compounds against these life threatening microbes like *Acanthamoeba*.

### Biography

Abdul Matin has completed his PhD from Birkbeck, University of London and Postdoctoral Fellowship from School of Medicine, Southampton University Hospital, Southampton, United Kingdom. He has long-standing research interests to explore therapeutic options to treat life threatening infections. He was honored with a specialty award and prize titled "The Best Researcher in the UK" by Medical Research Society (MRS), one of the most prestigious research societies in the country; for his outstanding contribution in human brain research in 2007 at Royal College of Physicians, London, UK. He is currently Associate Professor and Head of Medical Lab Technology & Public Health Departments at University of Haripur, Pakistan. He has published more than 20 papers in reputed journals and has been serving as an editorial board member and reviewers of reputed journals.

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