EFFECT OF SYNTHETIC ANTIMICROBIAL PEPTIDES ON *NAEGLERIA FOWLERI* TROPHOZOITES

Supathra Tiewcharoen[1], Watchara Phurttikul[1,2], Jundee Rabablert[3], Prasert Auewarakul[2], Sittiruk Roytrakul[4], Pruksawan Chetanachan[5], Thassanant Atithep[6] and Virach Junnu[1]

[1]Department of Parasitology, [2]Department of Microbiology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok; [3]Department of Biology, Faculty of Science, Silpakorn University, Nakhon Pathom; [4]Genome Institute, National Center for Genetic Engineering and Biotechnology, Pathum Thani; [5]National Institute of Health, Department of Medical Sciences, Nonthaburi; [6]Center of Nanoimaging, Faculty of Science, Mahidol University, Bangkok, Thailand

Abstract. We evaluated the effect of tritrpticin, lactoferrin, killer decapeptide and scrambled peptide *in vitro* against *Naegleria fowleri* trophozoites compared with amphotericin B. Tritrpticin (100 g/ml) caused apoptosis of *N. fowleri* trophozoites ($2x10^5$ cells/ml), while lactoferrin, killer decapeptide and scrambled peptide did not. On Gormori trichrome staining, tritrpticin affected the elasticity of the surface membrane and reduced the size of the nuclei of *N. fowleri* trophozoites. The ultrastructure surface membrane and food cup formation of the trophozoites were 100% inhibited. These results are consistent with inhibition of the *nfa1*, *Mp2CL5* of the treated trophozoite, which plays a role in food cup formation. Tritrpticin 100 g/ml was not toxic against SK-N-MC cells. Our findings suggest tritrpticin has activity against the surface membrane and *nfa1*and *Mp2CL5* of *N. fowleri* trophozoites and could be developed as a potential therapeutic agent.

Keywords: *Naegleria fowleri,* antiamebic peptide, tritrpticin

Correspondence: Jundee Rabablert, Department of Biology, Faculty of Science, Silpakorn University, Nakhon Pathom 73000, Thailand.
Tel: +66 (0) 34 243429; Fax: +66 (0) 34 273046
E-mail: jundee04@gmail.com; jundee@su.ac.th