EFFECT OF SYNTHETIC ANTIMICROBIAL PEPTIDES ON NAEGLERIA FOWLERI TROPHOZOITES

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Abstract. We evaluated the effect of tritrpticin, lactoferrin, killer decapptide and scrambled peptide in vitro against Naegleria fowleri trophozoites compared with amphotericin B. Tritrpticin (100 µg/ml) caused apoptosis of N. fowleri trophozoites (2x10⁵ cells/ml), while lactoferrin, killer decapptide and scrambled peptide did not. On Gomori 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 µg/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, antiamoebic peptide, tritrpticin