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Acanthamoeba secretes extracellular aminopeptidases to target cells for phagocytosis by disruption

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Acanthamoeba is free-living protist pathogen capable of causing a blinding keratitis and granulomatous encephalitis. However, the pathogenesis mechanisms of *Acanthamoeba* are still not clear. Here, our results show that the rat glial C6 cells co-cultured with *Acanthamoeba* would be spherical and floated, even without contact the protists. And then, the *Acanthamoeba* protists would contact and engulf these cells. In order to clarify the contact-independent pathogenesis mechanism in *Acanthamoeba*, we collected the *Acanthamoeba* secreted proteins (Asp) to incubate with cells for identifying the extracellular virulent factors and investigating the cytotoxic process. Pre-treating the Asp with aminopeptidase inhibitor and the specific antibodies of *Acanthamoeba* aminopeptidase could delay the progression of cell disruption during Asp and cells co-incubation. Overall, these results suggest an important functional role of the *Acanthamoeba* secreted extracellular aminopeptidases in *Acanthamoeba* pathogenesis process. This study provides new perspectives for the study of the mechanism involved in the *Acanthamoeba* infection.

Biography

Wei-Chen Lin has completed his PhD from Chang Gung University and postdoctoral studies in the Center of Disease Control, Taiwan. Dr. Lin is one of the pioneers on studying miRNA gene regulatory network in protozoan. His major research interest is to use bioinformatics approaches to integrate data generated by high-throughput technologies to compare the gene, protein and miRNA expression levels of protozoan as a basis to elucidate the interactome of pathogen-host.

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