

ULTRA STRUCTURE CHANGES OF DIOSGENIN-TREATED HUMAN MONOCYTE U937-DERIVED MACROPHAGES INDUCED BY *NAEGLERIA FOWLERI* LYSATE

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Abstract. Diosgenin has anti-amoebic activity against *Naegleria fowleri* and anti-inflammatory activity in human monocyte U937-derived macrophages incubated with *Naegleria* lysate. In order to better understand the mode of action of diosgenin, human monocyte U937-derived macrophages were induced by *N. fowleri* lysate and investigated using scanning electron microscopy (SEM). SEM revealed morphological changes of human monocyte U937-derived macrophages in size, shape, cytoplasmic extensions and microvilli. The formation of the disrupted membrane structure occurred in a time-dependent manner. No significant differences in cell morphology were observed between diosgenin-treated samples and untreated cells; however, macrophages induced by *N. fowleri* lysate or lipopolysaccharide (LPS) were completely damaged by 48 hours of incubation. Diosgenin-treated macrophages induced by *N. fowleri* lysate and LPS had thorn-like protrusions from filopodia and lamellipodia. Our findings show the affect of diosgenin at the ultracellular level.

Keywords: diosgenin, *Naegleria fowleri* lysate, human monocyte U937-derived macrophage, scanning electron micrograph

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