

The Living Fossil (Horseshoe crab)

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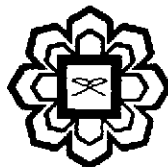
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Characterization of *Tachypleus* Amebocyte Lysate (TAL)

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Abstract

We adopted microscopic examination and immunoblotting techniques to characterize the lysated amebocytes extract prepared from Malaysian horseshoe crab (*Tachypleus gigas*) blood. The movement of amebocytes towards the periphery of the cover glass after 30 minutes of exposure proved the migration of active compounds towards the bacterial endotoxin. The arresting of bacterial cells was indicated by the formation of clotting at the end point of the microscopic examination. The activated Factor C was detected in immunoblotting technique. Present study clearly proved the characteristics of clotting enzyme and the microscopic details on the cell migration during bacterial invasion.

Key words: *Tachypleus gigas*, immunoblotting, bacterial endotoxin, Factor C, clotting enzyme.

Introduction

The mechanism of clot formation in American horseshoe crab *L.polyphemus* during the bacterial endotoxin invasion was extensively studied by various researches (Omberg and Reese, 1981; Armstrong and Rickles, 1982; Omberg, 1985; Toh *et al.*, 1991; Vasta, 1990; Fortes-Dias *et al.*, 1993) on *T.tridentatus* (Nakamura *et al.*, 1976) on *C.rotundicauda* (Ding *et al.*, 1993) and *T.gigas* (John *et al.*, 2010). However, the exploration on their blood to produce LAL/TAL was primarily on *L.polyphemus*. Mechanism of clot formation in Malaysian horseshoe crab *T.gigas* circulatory system during bacterial invasion is extensively studied by John *et al.*, (2010). When