



Application of horseshoe crab, *Tachypleus gigas* eggs peri-vitelline fluid on rat wound

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Abstract

Several studies on the peri-vitelline fluid (PVF) of horseshoe crab egg showed that it has the ability to stimulate cell proliferation and growth. This discovery may be of some benefits to the medical industry particularly those dealing with cells and tissue regeneration. This study determined the effect of horseshoe crab, *Tachypleus gigas* PVF taken from horseshoe crab eggs at 3rd and 4th embryonic stage, on brine shrimp, *Artemia* sp and rat, *Sprague dawley*. PVF with concentrations of 1.95 to 1000 mg/mL were tested on brine shrimp. While a total of 7 treatments include G1: negative control- 0.9% of saline, G2: positive control- Solcoseryl jelly 10%, G3: vehicle control- Petroleum jelly, G4: PVF 3rd – 100 mg/g, G5: PVF 3rd - 200mg/g, G6: PVF 4th - 100mg/g, and G7: PVF 4th - 200mg/g, were applied on rat wound. Results of different PVF concentrations showed no adverse effect on brine shrimp. As for the 7 treatments applied on rat wound, treatment using 200mg/g PVF taken from 4th embryonic stage showed the fastest wound recovery compared to other treatments. Based on this finding, it can be concluded that PVF from horseshoe crab eggs has the ability to stimulate wound recovery and at the same time, it can be used safely without toxic effect.

Keywords: Horseshoe crab, egg, fluid, rat wound