

# The Living Fossil (Horseshoe crab)

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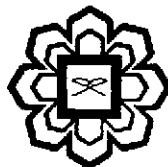
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## CHAPTER – 29

### **Factors involving in the clot formation of horseshoe crab blood**

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#### **Abstract**

The blood of the horseshoe crab has been an area of interest because of its blue colour, which is due to a copper based oxygen acceptor (hemocyanin) rather than the iron based receptor (hemoglobin) seen in mammals and other animals. Although the respiratory function of hemocyanin is similar to that of hemoglobin, there are a significant number of differences in its molecular structure and mechanism. When horseshoe crab hemolymph comes into contact with Gram-negative bacteria or Lipopolysaccharide (LPS), the amebocytes begin to degranulate, and hemolymph coagulation is initiated by the granule components. There are number of factors involving in accomplishing the formation of clot in horseshoe crabs circulatory system. This paper was attempted to address the importance and role of various factors involving in the clot formation of horseshoe crab blood during bacterial endotoxin invasion.

**Key words:** clotting factors, horseshoe crabs, hemocyanin, lipopolysaccharide, bacterial endotoxin.

#### **Introduction**

The scientific exploration on horseshoe crab blood was started due to the limitation in the detection of bacterial pyrogenicity using rabbit as a test animal. For most of the 20th century, the Rabbit Pyrogen Test (RPT) was the standard method for testing the quality of injectable drugs,