

Some of Reticular Cells in Hemopoietic Organ of Grasshopper, and *Euprepocnemis shiraki*, Enclose CD34+ Sca-1+ cell

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Insect have an efficient defense system against infection. The defense mechanism is similar to innate immunity of mammal. In insect immunity, cellular response including phagocytosis, encapsulation is important. Because of these reasons, for effective host defense, appropriate hemopoiesis is very important. Insect hemopoiesis is occurred in hemopoietic tissue which is located bilaterally along aorta. Especially, orthopteran has reticulo-hemopoietic organ. This was named for the reason of richness of reticular cells. We have studied the hemopoietic organ of grasshopper, *Euprepocnemis shiraki* (orthoptera). Especially about the structure of reticular cells, which is abundant in hemopoietic organ. And we suggest the role of reticular cells in hemopoiesis. Reticular cells of hemopoietic organ were distributed in all regions. When observed by light microscopy, we found some of cells have numerous nucleus in their cytoplasm. In semithin sections, several cells were enclosed within reticular cytoplasm. The enclosed cells were distinguished by their different size, darkly stained granules and so on. When determined these cell's character by immunostaining using several known hemocyte antibodies. Some of enclosed cells were CD34 positive cells. and these CD34 positive cells (over 85%) were double labeled when immunostained by murine hemopoietic pluripotent cell marker, Sca-1. And transmission electron microscopic analysis show that reticular cells have reticular cytoplasm and thick and extremely ramified fibers. And they contained cells which have large nucleus and poorly developed cytoplasmic organelles.