

昆虫造血作用和造血干细胞研究进展

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Progress in hematopoiesis and hematopoietic stem cells in insects

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全文: PDF (7096 KB) HTML (1 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 昆虫血细胞 (insect hemocyte) 在昆虫代谢、发育变态以及先天免疫等方面承担着重要的作用。昆虫只有先天免疫系统, 血细胞所行使的免疫功能对于昆虫对抗外源病菌尤为重要。本文主要介绍了昆虫血细胞类型、造血作用、造血干细胞及造血相关因子的相关研究。通过特殊染色和形态学观察, 果蝇 *Drosophila* 血细胞主要由3类细胞组成, 而鳞翅目等大部分昆虫血细胞由5类细胞组成。昆虫血细胞主要存在于循环血液环境及造血器官内, 而在这两个系统中都存在有进行复制的血细胞, 这为研究昆虫造血干细胞特性和其定位提供了一个很好的系统。果蝇血细胞祖细胞来自于胚胎中胚层细胞, 然后再分化为各种血细胞, 这一系列分化过程由造血因子所调控。

关键词: 昆虫; 血细胞; 造血作用; 造血干细胞; 调控因子

Abstract: Insect hemocytes play important roles in the metabolism, metamorphosis and immunity, which are closely related events of growth and development. Because of lack of the adaptive immunity, immunity functions that the insect hemocytes execute play important roles in combating exogenous pathogens. This review summarizes the recent progress in the types of insect hemocytes, hematopoietic organs, haematopoietic stem cells and the regulating factors in insect haematopoiesis. There are three types of hemocytes in *Drosophila*, while most hemocytes of Lepidoptera and other insect species, can be classified into five types, depending on staining patterns. Insect hemocytes are dispersed in the circulating hemolymph and hematopoietic organs, where the hemocytes can replicate. The two systems are important for the characterization and localization of the hematopoietic stem cells in insects. Blood progenitors which arise from the *Drosophila* embryonic mesoderm differentiate into various hemocytes, and these processes are controlled by hematopoiesis regulating factors.

Key words: Insect hemocyte hematopoiesis hematopoietic stem cell regulating factors

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