



Mast Cells

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Mast cells are long-lived tissue-resident cells with an important role in many inflammatory settings including host defence to **parasitic infection** and in **allergic reactions**. Mast cells are located at the boundaries between tissues and the external environment, for example, at mucosal surfaces of the gut and lungs, in the skin and around blood vessels. Mast cells are key players in the inflammatory response as they can be **activated** to release a wide variety of inflammatory mediators, by many different **antigens** including **allergens**, **pathogens** and **physiological mediators**.

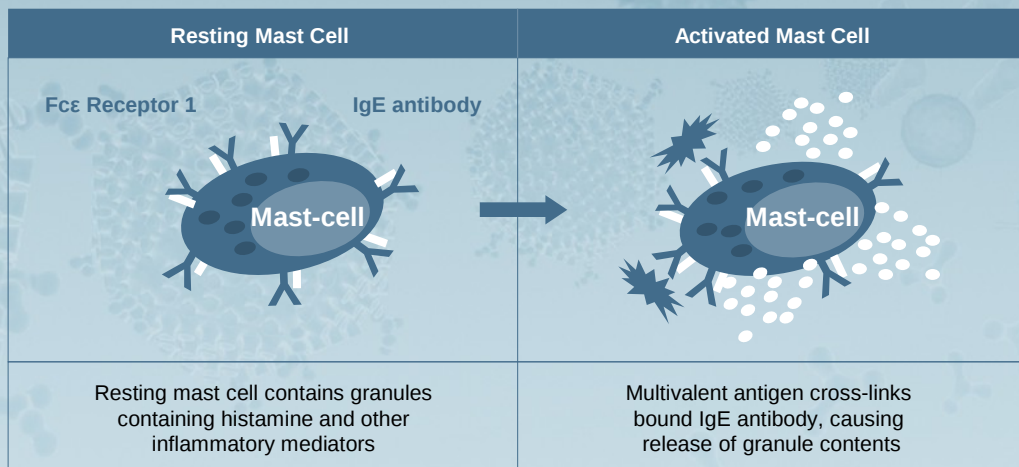


Figure 1. Mast-cell activation

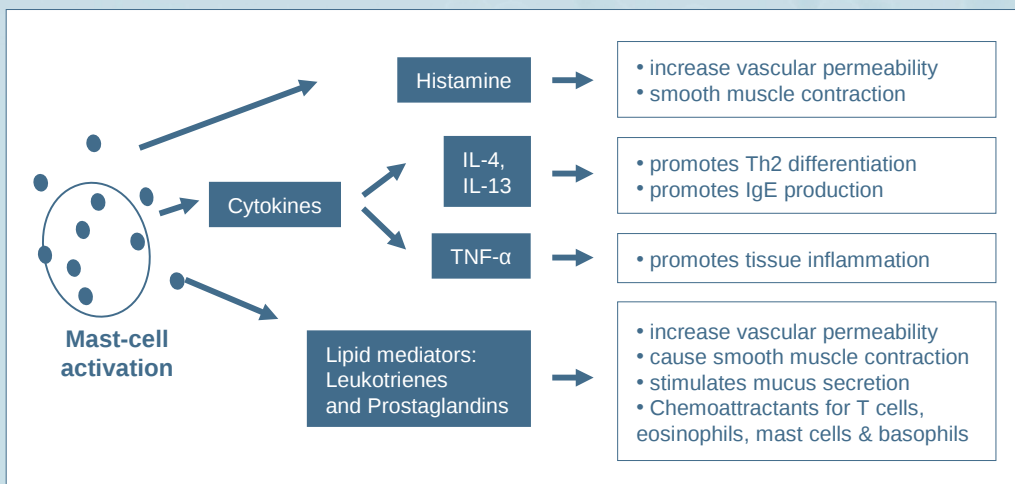


Figure 2. Effects of mast-cell activation

Mast cells derive from the **bone marrow** but unlike other white blood cells, mast cells are released into the blood as **mast cell progenitors** and do not fully mature until they are recruited into the tissue where they undergo their terminal differentiation. **Stem cell factor** (SCF) is a cytokine essential for mast cell development, proliferation and survival. Mast cells can be distinguished from other cell types in tissue sections by **Toluidine blue** staining that stains mast cells blue.

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