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**Immunological Aspect on Bone Cells**

Viskasari Pintoko Kalanjati --> Department of Anatomy & Histology Airlangga University School of Medicine Surabaya

**Abstract**

Immunological aspect on bone cells is closely connected with the existence of estrogen. There are so many immune factors depend on estrogen. Functional interdependence between immune and bone systems is reflected in a number of regulatory molecules acting on the cells of both systems and common precursors for bone and immune cells. Therefore, the disturbances of the immune system may affect bone metabolism, and vice versa. This review addresses the roles of two major immune cell populations, T and B lymphocytes, in the regulation of bone metabolism. Experimental models and human diseases demonstrated that T lymphocytes may produce many bone cell regulatory cytokines, including two essential stimulators of osteoclastogenesis: receptor for activation of nuclear factor kappa b (NF-κB) (RANK) ligand (RANKL) and macrophage colony-stimulating factor (M-CSF). This journal will reveal some of estrogen roles on bone immunology system that can affect bone metabolism.

**Keyword**: immune, system, bone, cells, estrogen,

**Daftar Pustaka**: