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Basophils in skin inflammation.

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Source

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Abstract

Basophils represent less than 1% of peripheral blood leukocytes. Under physiological conditions, basophils principally circulate in peripheral blood, while mast cells reside in peripheral tissues. Like mast cells, they express the high-affinity IgE receptor on their cell surface and release chemical mediators.

Because of morphological and functional similarities, basophils have long been considered to be redundant "circulating mast cells" and minor (probably negligible) players in inflammation. Mouse and human basophils cannot be stained in routinely processed histological specimens, and thus, our understanding of tissue basophils in allergic inflammation had been limited.

However, recent studies in mice have revealed that basophils play non-redundant roles from mast cells. Basophils function as a source of IL-4, IL-13, and CCL22, thereby contributing Th2 immunity. They are also capable of presenting antigens. Basophils are essential for the development of IgE-

mediated chronic allergic skin inflammation in mice. Recent immunohistochemical studies with an basophil-specific antibody revealed that, in humans, varying numbers of basophils infiltrate skin lesions of inflammatory diseases, such as atopic dermatitis, urticaria, prurigo, and eosinophilic pustular folliculitis. Basophils may play important roles in a variety of inflammatory skin diseases than previously thought.

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