

## Allergy-immunology glossary

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*Towards a clear designation of some of the terms used in allergology and immunology.*

<b>Mast cells</b>	Mast cells (MCs) are specifically involved in type I hypersensitivity reactions where they release their granule contents of histamine and heparin, and synthesize and secrete other mediators into the surrounding tissues. Mast cells are also involved in delayed hypersensitivity, cytotoxicity, immunoregulation and inflammation <sup>1</sup> . A role is now defined for MCs in controlling dendritic cell (DC) behavior (“conditioning”) to facilitate tolerance. Under tolerant conditions, MCs mediate a marked increase in tumor necrosis factor-dependent accumulation of graft-derived DCs due to the local production of granulocyte macrophage colony-stimulating factor by MCs that induces a survival advantage of graft-derived DCs <sup>2</sup> .	الخلايا البدينة <sup>٣</sup>
<b>5-hydroxy-tryptamine (5-HT; serotonin)</b>	Although serotonin is not normally present, it has been demonstrated in mast cells in the stroma of carcinoid tumours and in mastocytosis <sup>1</sup> . There are reports that serotonin is also increased at sites of inflammation such as in contact and atopic dermatitis; and in the blood and sputum of asthmatics <sup>4</sup> . Histamine and serotonin storage in mast cells is dependent on serglycin proteoglycan <sup>5</sup> .	السيروتونين <sup>٣</sup>
<b>Serglycin</b>	Serglycin is a proteoglycan found in hematopoietic cells and endothelial cells. It has important functions related to formation of several types of storage granules and an important role in inflammatory reactions. In mast cells, serglycin interacts with histamine, chymase, tryptase and carboxypeptidase, in neutrophils with elastase, in cytotoxic T cells with granzyme B, in endothelial cells with tissue-type plasminogen activator and in macrophages with tumor necrosis factor-alpha. Serglycin is important for the retention of key inflammatory mediators inside storage granules and secretory vesicles <sup>6</sup> .	السرغلايسين

### REFERENCES:

1. **ÖZDEMİR O.** Evaluation of human mast cell-mediated cytotoxicity by DIOC18 target cell labeling in flow cytometry. *Journal of Immunological Methods* 2007; 319:98-103.
2. **DE VRIES VG, PINO-LAGOS K, NOWAK EG, BENNETT KA, OLIVA C, NOELLE RJ.** Mast cells condition dendritic cells to mediate allograft tolerance. *Immunity* 2011; 35: 550-61.
3. Unified medical dictionary UMD-2000. ISBN 92-9021-276-4. World Health Organization, Regional office for the Eastern Mediterranean.
4. **KUSHNIR-SUKHOV NM, GILFILLAN AM, COLEMAN JW, BROWN JM, BRUENING S, TOTTH M, ET AL.** 5-hydroxytryptamine induces mast cell adhesion and migration. *J Immunol.* 2006;177(9):6422-32.
5. **RINGVALL M, RÖNNBERG E, WERNERSSON S, DUELLI A, HENNINGSSON F, ABRINK M, ET AL.** Serotonin and histamine storage in mast cell secretory granules is dependent on serglycin proteoglycan. *J Allergy Clin Immunol.* 2008;121(4):1020-6.
6. **KOLSET SO, TVEIT H.** Serglycin structure and biology. *Cell Mol Life Sci* 2008;65(7-8):1073-85.