

Up-regulation of melatonin synthesizing enzymes in mast cells

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Recent investigations of human immunological regulation have suggested that mast cells may play an important role in maintaining homeostasis. Some of these studies have suggested that mast cell cytokines may play key roles in prevention of both viral and bacterial infections, and the development of tumors. The present study focused on the enzymes for melatonin synthesis in mast cells because of their rolls in immune response. mRNA expression from LAD2 cells, a human mast cell-derived cell line, was examined for aralkylamine N-acetyltransferase (AANAT) and hydroxyindole O-methyltransfase (HIOMT), key enzymes in melatonin synthesis. LAD2 were positive for mRNA expression of both enzymes. The mRNA levels were enhanced by stimulation with db-cAMP (500 μ M) with no β -hexosaminidase (β -Hex) release; in contrast, A23187 (2 μ M) did not enhanced mRNA levels but did induce β -Hex release. These results suggest that melatonin release from mast cells is involved in maintaining homeostasis, and is not involved in allergic responses.