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The emerging role of mast cell proteases in asthma

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Mast cells express large amounts of proteases, including tryptase, chymase and carboxypeptidase A3. An extensive review of how these proteases impact on asthma shows that they can have both protective and detrimental functions. http://bit.ly/2Gu1Qp2

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ABSTRACT It is now well established that mast cells (MCs) play a crucial role in asthma. This is supported by multiple lines of evidence, including both clinical studies and studies on MC-deficient mice. However, there is still only limited knowledge of the exact effector mechanism(s) by which MCs influence asthma pathology. MCs contain large amounts of secretory granules, which are filled with a variety of bioactive compounds including histamine, cytokines, lysosomal hydrolases, serglycin proteoglycans and a number of MC-restricted proteases. When MCs are activated, *e.g.* in response to IgE receptor cross-linking, the contents of their granules are released to the exterior and can cause a massive inflammatory reaction. The MC-restricted proteases include tryptases, chymases and carboxypeptidase A3, and these are expressed and stored at remarkably high levels. There is now emerging evidence supporting a prominent role of these enzymes in the pathology of asthma. Interestingly, however, the role of the MC-restricted proteases is multifaceted, encompassing both protective and detrimental activities. Here, the current knowledge of how the MC-restricted proteases impact on asthma is reviewed.

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