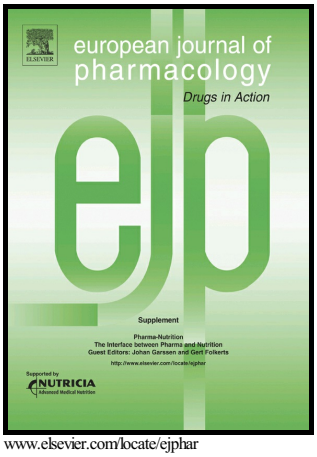
Bradykinin in asthma: modulation of airway inflammation and remodelling

Fabio L.M. Ricciardolo, Gert Folkerts, Anna Folino, Barbara Mognetti



www.elsevier.com/locate/ejphar

PII: S0014-2999(18)30164-X
DOI: https://doi.org/10.1016/j.ejphar.2018.03.017
Reference: EJP71721

To appear in: *European Journal of Pharmacology*

Received date: 27 September 2017
Revised date: 5 March 2018
Accepted date: 9 March 2018

Cite this article as: Fabio L.M. Ricciardolo, Gert Folkerts, Anna Folino and Barbara Mognetti, Bradykinin in asthma: modulation of airway inflammation and remodelling, *European Journal of Pharmacology,* https://doi.org/10.1016/j.ejphar.2018.03.017

Bradykinin in asthma: modulation of airway inflammation and remodelling

Fabio L.M. Ricciardolo[1], Gert Folkerts[2], Anna Folino[1], Barbara Mognetti[1]

[1]Department of Clinical and Biological Sciences, University of Torino, Torino, Italy

[2]Department of Pharmacology, Utrecht Institute for Pharmaceutical Sciences, University of Utrecht, Utrecht, NL

*Corresponding Author: Prof. Fabio L.M. Ricciardolo, MD and PhD, Department of Clinical and Biological Sciences, University of Torino, A.O.U. San Luigi Gonzaga, Regione Gonzole 10, 10043 - Orbassano (Torino), Italy

ABSTRACT

Bradykinin, a pro-inflammatory molecule, and its related peptides have been studied for their effects on acute reactions in upper and lower airways, where they can be synthesised and metabolized after exposure to different stimuli including allergens and viral infection. Bradykinin B_1 and B_2 receptors are constitutively expressed in the airways on several residential and/or immune cells. Their expression can also be induced by inflammatory mediators, usually associated with eosinophil and neutrophil recruitment, such as IL-4, IL-13, TNF-α, IL-6 and IL-8, via intracellular MAPK and NF-κB signalling. In turn, the latters up-regulate both bradykinin receptors. Bradykinin activates epithelial/endothelial and immune cells, neurons and mesenchymal cells (such as fibroblasts, myofibroblasts and smooth muscle cells), which are implicated in the development of