ROLE OF NOCICEPTIN AND ITS RECEPTOR IN ANIMAL MODELS OF AIRWAY INFLAMMATION

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The nociceptin/orphanin FQ is an endogenous peptide which, via selective activation of N/OFQ peptide (NOP) receptor, plays an important role in various central as well as peripheral (cardiovascular, renal, gastrointestinal and airway) systems. The peptide/receptor system is considered a "non- opioid branch of the opioid family" of peptides and receptors, because the N/OFQ–NOP receptor and classical opioid have structural and transductional similarities, but pharmacological and functional differences. It has been showed that N/OFQ-NOP receptor may influence airway physiology by modulating tachykinergic neurotransmission. In the airways, capsaicin sensitive sensory nerve fibres are involved in the regulation of airway smooth muscle tone, by the release of some neuropeptides like tachykinins, substance P and neurokinin A. The activation of these sensory nerves elicits a several airways responses, which include smooth muscle contraction, mucus secretion, microvascular leakage, vasodilatation, recruitment and activation of inflammatory cells. We have demonstrated that, in airways, nociceptin is able to significantly reduce the bronchocostriction and airway inflammation, induced by HCl infusion, in a rabbit model of gastroesophageal reflux, and, moreover, that the N/OFQ-NOP system is involved in the modulation of neurogenic inflammation, induced by capsaicin, in a model of isolated and perfused mouse lung.