

Allergy

Targeting NTRK1 for Treatment of Allergic Inflammatory Conditions

Brief Description of Technology

Pharmacological targeting of NTRK1 using small molecule inhibitors may reduce allergic inflammation.

TECHNOLOGY ID

2014-1101

BUSINESS OPPORTUNITY

Exclusive License or Sponsored
Research

TECHNOLOGY TYPE

Therapeutic Target

PATENT INFORMATION

US Non-Provisional Filing

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Technology Overview

IL-13 and neutrophins are functionally important to the pathogenesis of allergic disease. Drs. Rothenberg and Rochman have discovered that in epithelial cells, NTRK1 (a high-affinity receptor for nerve growth factor, NGF) is an early transcriptional target of IL-13. Furthermore, in epithelial cells, IL-13 and NGF synergistically express genes important to allergic disease, including eotaxin-3 (CCL26). In a model of eosinophilic esophagitis (EoE), NTRK1 was increased and dynamically expressed as a function of disease activity, while its ligand NGF was constitutively expressed in control and disease states. This suggests that IL-13 stimulated NTRK1 induction is a limiting factor in pathway activation. Pharmacological inhibition of NTRK1 may be a novel and important mechanism for limiting allergic disease pathogenesis.

Applications

Therapeutic treatment of allergic inflammatory conditions

Advantages

- Commercially available, highly specific NTRK1 inhibitors are available for use
- Targets a wide range of eosinophilic disorders
- Reapplication of lestaurtinib (CEP-701), and crizotinib

Market Overview

Eosinophilic disorders range from the very common, such as asthma and atopic dermatitis, which affect nearly 8% and 9-30% of the US population respectively, to rare diseases such as eosinophilic gastroenteritis (10/100,000) and hypereosinophilic syndrome.

Investigator Overview

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