

Novel Aerosolized Treatment for Asthma

Published date: July 18, 2012

Technology description

Investigators have developed microspheres carrying antisense DNA technology targeted to specific molecules vitally involved in allergic asthma. These microspheres can be administered via an aerosolized formulation. The microsphere encapsulated anti-sense molecules orchestrate an anti-inflammatory response by considerably decreasing the pro-inflammatory cytokines secreted by mast cells and dendritic cells in the lung. Moreover, the microspheres were found to reach a large population of lung cells following intratracheal instillation.

Background

Allergic asthma is a complex inflammatory disease of the lungs characterized by variable airflow obstruction, airway hyperresponsiveness (AHR) and airway inflammation. The inflammatory process consists of a chronic infiltration by mast cells, basophils, eosinophils, dendritic cells and T-lymphocytes, each playing a distinct role as part of a network of local inflammation. The key biomarker of allergic asthma is the IgE antibody, now considered to be the critical of the human allergic response. Given the role of the IgE molecule in the asthmatic inflammatory response, reducing its levels or inhibiting its actions on mast cells, basophils and dendritic cells could have a major impact on asthma prevention and therapy of active disease. While current therapies are available, they do not completely eliminate IgE. IgE can therefore still activate acute processes.

Application area

Inhaled treatment for reversal and prevention of asthma

May be used to treat other systemic allergic reactions mediated by IgE

Microsphere formulation extends half-life of oligonucleotides

Effective concentration of molecules accumulate in lung target tissue

Appears to have less toxicity than humanized IgE antibodies

Institution

[University of Pittsburgh](#)

Inventors

[Massimo Trucco](#)

[Wilson Meng](#)

[Nick Giannoukakis](#)

联系我们



叶先生

电话 : 021-65679356

手机 : 13414935137

邮箱 : yeyingsheng@zf-ym.com