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TECHNOLOGY OPPORTUNITY

First in Class 5-Oxo-ETE Receptor Antagonists

McGill University is seeking a company interested in developing and commercializing 5-Oxo-ETE receptor antagonists for the treatment of asthma, allergic rhinitis with an eosinophilic component. Asthma and allergies represent a significant burden on the healthcare system; 8% of the worldwide population in industrialized countries (more than 60 million people) is afflicted with asthma whereas 150 million people suffer from allergic rhinitis. The asthma and allergic rhinitis market was valued at \$25 billion and is continuing to grow in spite of the fact that available treatments provide symptomatic relief at best. An effective, safe and potent antagonist of the OXE receptor would represent a novel therapeutic approach in asthma and allergic rhinitis.

Applications

Monotherapy or adjunct therapy for asthma, allergic rhinitis and other inflammatory diseases.

Advantages

- First in class OXE receptor antagonists directed against a new therapeutic target in asthma and allergic rhinitis.
- Compounds could be used alone or in combination with leukotrienes or corticosteroids to provide treatment options for patients unresponsive to current therapies.
- 5-Oxo-ETE is one of the most potent chemoattractant for eosinophils, antagonist drugs could be developed for treatment of eosinophilic diseases other than asthma and allergic rhinitis, thereby broadening the market potential.

Technology

Eicosanoids are important mediators of the inflammatory response. The two major pathways for the metabolism of arachidonic acid are initiated by the actions of cyclooxygenase 1 & 2 and 5-lipoxygenase (5-LO). Products of the 5-LO pathway, including leukotrienes and 5-oxo-ETE, are particularly important in inflammation and asthma. 5-oxo-ETE is a potent chemoattractant for eosinophils, basophils and neutrophils, its actions being mediated by the OXE receptor. Drs Powell and Rokach have synthesized first-in-class antagonists of the OXE receptor. The compounds have been tested in the following assays: Ca mobilization in human neutrophils, 5-oxo-ETE induced neutrophil chemotaxis and 5-oxo-ETE induced actin polymerization. Two compounds, # 60 and #103, exhibit potent antagonist activity and are devoid of any agonist effects. In the calcium mobilization assay #60 has an IC_{50} of about 30 nM whereas #103 is about 34 nM. Both of these lead compounds are racemic mixtures and their pure active enantiomers exhibit enhanced potency.

Contact

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