Sp-A2 Peptides in the Treatment of Lung Diseases

Title: Peptides for the Treatment of Asthma, Lung Diseases

Invention: This technology is the development of both a series of peptides related to surfactant protein-A (SP-A) and a treatment method for asthma and other lung diseases that utilizes said peptides.

Background: Eosinophils are a type of white blood cell that are prominently found in lung tissue and the circulatory system of individuals with type-2 inflammatory asthma. Treatment strategies that focus on reducing the quantity of these cells have been shown to be effective at reducing asthma hospital admission rates. Unfortunately, the use of b2 agonists, the mainstay of asthma treatments worldwide, actually increases the survivability of eosinophils, possibly exacerbating the condition. Surfactant protein-A (SP-A) is a surfactant protein class that is proven to target eosinophil recruitment in respiratory tissues. Research conducted at the University of Arizona has shown that treatment with the proposed compounds can reduce both eosinophil concentration and production of mucin in mouse tissue and in vitro human cells, suggesting that these peptides may be effective in treating asthma.

Applications:

- Treatment of asthma and other respiratory diseases

Advantages:

- Reduces the recruitment of eosinophils to lung tissue
- Works to clear eosinophils, ultimately decreasing lung inflammation
- Potential to reduce lung infections
- Reduces the production of mucin
- More effective in overweight asthmatic individuals because they have less SP-A in their pulmonary tissue relative to other asthma sufferers
- Potential utility as a treatment for certain types of asthma

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