A Novel Anti-Inflammatory Agent

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Technology description

Background

Chronic inflammation contributes to a broad spectrum of diseases including arthritis, psoriasis, diabetes, allergy, connective tissue diseases, and heart disease. Despite the range of current therapeutics on offer, there is unmet clinical need as treatments such as corticosteroids, though often effective, are associated with serious side effects.

Technology

A research team at the Universities of Strathclyde and Glasgow have taken the novel approach of searching for anti¬-inflammatory agents produced by pathogens during their battle to avoid elimination by the host. This has led to their discovery of ES-62, a glycoprotein that is secreted by filarial nematodes, highly successful parasites of vertebrates including humans. The team has demonstrated that ES-62 is a potent, broad spectrum anti-inflammatory molecule which effectively reduces inflammation whilst leaving essential defence mechanisms intact. Manufacture of ES-62 itself is not commercially viable but further research has produced small molecule derivatives (SMDs) that exhibit anti¬-inflammatory activity in vivo.

Application area

This technology has the potential to treat many inflammatory-based conditions such as rheumatoid arthritis, systemic lupus erythematosus and asthma.

Advantages

Broad portfolio of potential target diseases
Selective immunomodulation as the patient remains ‘immune-competent’ and able to fight off infections
Early indicators show very low disease progression and the protection of bone and cartilage in models of rheumatoid arthritis, and inhibition of inflammatory responses in the lung models of asthma
ES-62 circulates in millions of filarial nematode-infected people in the Tropics yet mediates no known adverse events on general health
ES-62 mode of action, SMDs and cellular targets identified

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