Therapeutic compositions of cortistatin for the treatment of chronic fibrosis

CSIC has developed a therapeutic tool that enables obtaining compositions of cortistatin highly effective, and without side effects, in the treatment of chronic fibrosis such as liver, lung and dermal, among others. The high effectiveness of the composition is based on the fusion of the pharmaceutically active agent to both a latency-associated peptide (LAP) and a proteolytic cleavage site that enable, respectively, maintain cortistatin in a latent form and activate it, by means of its controlled release, specifically in fibrotic tissue.

Industrial partners from the pharmaceutical sector are being sought to collaborate through a patent licence agreement.

An offer for Patent Licensing

Description of the Technology

Progressive fibrosis in organs such as the lung, kidney, heart and liver is the main cause of many chronic diseases. Patients with chronic unsolved fibrosis tend to have a worse prognosis, estimating that a third of deaths in developed countries are caused by chronic fibrotic diseases.

Despite the knowledge that we have of the cellular and molecular actors involved in the development of fibrosis, there is a total absence of effective therapies focusing current treatments (medications, oxygen therapy, pulmonary rehabilitation) on slowing the progression of the disease, relieve symptoms and improve the quality of life of patients.

The present invention responds to the need for a drug search for the treatment of these pathologies. In such a way that the developed composition, based on the antinflammatory and antifibrotic capacity of the neuropeptide cortistatin, is not only capable of stopping the progression of chronic fibrosis but also has therapeutic effects in established chronic fibrosis.

The use of the compositions developed represents an enormous advance in the treatment of chronic fibrosis because, to date, there are no effective therapies for the treatment of these diseases.

Main innovations and advantages

- Studies in mice demonstrate that the use of the therapeutic composition improves, at least 1,500 times, the response to diseases such as scleroderma and idiopathic pulmonary fibrosis with respect to the use of free cortistatin.
- The efficiency of the composition is due to the protection against latent cortistatin degradation. Thus, while free cortistatin loses its activity in minutes, LAP maintains the stability of cortistatin for weeks.
- The controlled release of the pharmaceutically active agent by the action of the proteolytic cleavage site through matrix metalloproteinases causes cortistatin to be released only in fibrotic organs or tissues, avoiding long-term side effects.
- The use of essential preclinical models for testing antifibrotic agents enables an immediate transfer to the clinic of the developed composition.

Patent Status

PCT patent application filed

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