

PROFILE



The Institute of Parasitology and Biomedicine Lopez-Neyra (IPBLN) forms part The Spanish National Research Council (CSIC), the largest public research in Spain, fourth in Europe and seventh in the world. With motto "knowing to cure" the research activity of IPBLN is aimed to design new therapeutic strategies and procedures for diagnostic of diseases of world-wide impact, with especial emphasis in infectious, immune and degenerative disorders.

SPEAKER

Dr. Mario Delgado, PhD in Biology (Immunology) by Complutense University. Full Professor of CSIC. Expert in Neuroimmunology and the design of new therapies for the treatment of immune disorders. 200 international publications. H-index: 65 (WoS). Discovery of neuropeptides and mesenchymal stem cells as regulators of immune system. >10 patents. Inventor/patent of Alofisel (Takeda), first allogeneic medicament authorized by EMA for treatment of Crohn disease, and of Aviptadil for treatment of cytokine storm in Covid19 and sarcoidosis.



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PRODUCT

Therapeutic compositions of cortistatin for treating chronic fibrosis

MECHANISM OF ACTION

We recently found that cortistatin, a neuropeptide with potent anti-inflammatory effects, was able to regulate chronic fibrosis in skin, lung and liver. Now, we have designed, by genetic engineering, a latent molecule of cortistatin that is protected by a molecular shield and allows the specific release of the active peptide in the inflammatory-fibrotic site/organ. This new latent form cortistatin has increased half-life, improved biodistribution and reduced side effects. We have demonstrated the therapeutic effect of latent cortistatin in various preclinical experimental models of scleroderma, idiopathic pulmonary fibrosis and hepatic fibrosis.

A latent-associated peptide (LAP) protects cortistatin from degradation by peptidases after its injection into the body and a site of recognition by metalloproteinases, enzymes that are abundant in inflammatory and fibrotic foci, selectively release the active form of cortistatin only in these places. Once in the fibrotic site, cortistatin impairs two major components of the fibrotic disorder, the inflammatory response that is responsible of initiating and fueling chronic fibrosis, and the activation of fibrogenic cells like fibroblasts and myofibroblasts.

TARGET INDICATIONS

Chronic fibrosis affects to various organs (heart, lung, liver, kidney, skin) and is a major cause for pulmonary hypertension, heart and renal failures and cirrhosis and of more than 1/3 of deaths occurring in developing countries. Idiopathic pulmonary fibrosis, nonalcoholic hepatic fibrosis, cholestatic liver fibrosis an systemic sclerosis are some examples of disorders where chronic fibrosis needs to be resolved.

CURRENT STATUS

- Latent cortistatin has demonstrated potent therapeutic efficiency in preclinical models of pulmonary and liver fibrosis and scleroderma.
- The intranasal and systemic infusion of latent cortistatin avoided mortality caused by severe bleomycin-induced pulmonary damage and toxic-induced hepatic cirrhosis, and

significantly reduced histopathological signs and fibrotic markers in both experimental models.

- Similarly, local injection of latent cortistatin significantly reduced skin lesions and fibrotic markers in an experimental model of bleomycin-induced scleroderma and avoided the appearance of other systemic complications, like pulmonary fibrosis, that are associated to this disease.

INNOVATIVE ASPECTS

- Latent cortistatin is able to regulate the main pathological components of all fibrotic disorders, inflammation and fibrosis itself.
- Moreover, cortistatin has showed a wide-therapeutic window in preclinical models.
- Latent cortistatin showed similar therapeutic effects at 5000-fold lower doses than that showed by commercial cortistatin.
- Treatments with cortistatin is safe and well-tolerated by humans (clinical assays in patients with Cushing disease and Acromegaly).

IPR

The use of latent cortistatin for the treatment of chronic fibrotic diseases is protected by a PCT patent (PCT/EP2020/054118): *Cortistatin or an analogue thereof as a pharmaceutically active agent in latent form*

PARTNERING OPPORTUNITIES

Our priority is licensing the patent to a Pharmaceutical Company that is interested in development of new therapeutic strategies for treating chronic disorders that course with exacerbated fibrosis, like idiopathic pulmonary fibrosis, cystic fibrosis, hepatic cirrhosis or systemic sclerosis.