Technology Offer CSIC/EG/132

Biomarker for diagnosis and prognosis of Multiple Sclerosis (MS)

Analysis of TAF1 isoforms in blood and cerebrospinal fluid of controls and individuals with MS.

Intellectual Property

Priority patent application filed

Stage of development

Proof of concept in laboratory

Intended Collaboration

Licensing and/or co-development

Contact

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Market need

The understanding of the trigger for the progressive phase of multiple sclerosis (MS) and the implementation of effective treatments for this stage, remain a major challenge in this pathology. Besides, the diagnosis of progressive MS is usually made retrospectively. Hence, patients keep receiving treatments that are not longer effective for several years, with the risk of developing side effects.

Now that the first drugs for progressive MS have been approved, it is crucial to have biomarkers that detect the transition to progression and help monitor its evolution by means of a simple, minimally invasive and effective method.

Proposed solution

The loss of the C-terminal end of TAF1 protein that takes place in brain tissue from individuals with progressive MS, has been demonstrated to be pathogenic in an animal model. In addition, there is a correlation between less C-terminal TAF1 levels and an aggressive course of the disease.

Thus, we propose that the identification of truncated TAF1 isoforms that lack the C-terminal end in blood and/or cerebrospinal fluid from patients may become a novel biomarker of the disease. Besides its potential diagnostic and prognostic role, it may be employed for monitoring the response to novel treatments focused on preventing the C-terminal loss of TAF1.

Competitive advantages

- The proposed method is a simple, quick and minimally invasive diagnostic tool.
- The detection of C-terminal truncated TAF1 isoforms may predict the transition to progressive MS, allowing clinicians to adjust the treatment in a reasonable timeframe.
- Unlike other biomarkers of MS, TAF1 is related to the pathogenesis of the disease, thus allowing to monitor the response to treatments focused on correcting TAF1 alteration.