

Accure Therapeutics publishes pivotal preclinical efficacy study in epilepsy

- **No currently marketed drugs are able to stop the progression of epilepsy, those available only help manage seizures**
- **More than 30% of patients do not respond adequately to those drugs carrying risks of structural damage to the brain and nervous system, comorbidities and increased mortality**
- **Accure Tx's candidate ACT-03 demonstrates in animal models anti-epileptogenic activity while protecting against cognitive decline**

Barcelona, Spain, February 10, 2021 - Accure Therapeutics, a private translational R&D engine at clinical stage in the Central Nervous System (CNS) field, today announces the publication of a pivotal preclinical efficacy study in the January issue of the peer-reviewed Journal of Clinical Investigation (JCI). The paper, '[The matrix metalloproteinase inhibitor IPR-179 has antiseizure and antiepileptogenic effects](#)', shows that Accure's new drug candidate ACT-03 (formerly IPR-179) is the first candidate able to modulate epileptogenesis.

"The anti-epileptogenic capacity of our drug candidate ACT-03 paves the way for a new pharmacological treatment for epilepsy," said Laurent Nguyen, CEO at Accure Therapeutics. "It represents a significant first-in-class innovation in the development of disease modifying treatments for epilepsy."

The study results show that the drug candidate, when administered in animal models over one week, can slow the progression of the disease by reducing the severity and number of spontaneous seizures (up to seven weeks after initial drug administration). It was also shown to prevent cognitive decline - one of the main comorbidities associated with epilepsy.

"This preclinical study is very interesting in that it shows that ACT-03 is able to slow the progression of the disease," said Prof Lawrence J. Hirsch, director of the Epilepsy Center at Yale University and member of the scientific advisory board of Accure Therapeutics, (who did not participate in the study). "If this is confirmed in humans, it will be of major importance for people who live with refractory epilepsy or those who have rare epileptic syndromes. Patients with recent onset of the disease could also benefit, as well as those with a high risk of developing epilepsy in the near future - for example, patients who have suffered severe traumatic brain injury or intracerebral hemorrhage."

The interdisciplinary work was carried out on an international scale in collaboration with Dr. Erwin Van Vliet and Dr. Eleonora Aronica of the Department of NeuroPathology at the University of Amsterdam (The Netherlands) and Dr. Alexander Dityatev of the molecular neuroplasticity group at the German Center for Neurodegenerative Diseases (DZNE). The research received funding from the European Union's Horizon 2020 Research and Innovation Programme, the European Union's Seventh Framework Programme and the Dutch Epilepsy Foundation.

After screening more than 100,000 compounds, Accure Therapeutics developed ACT-03, a selective and blood-brain barrier (BBB) permeable matrix metalloproteinase (MMP) inhibitor. In preclinical models, it has been shown to be well tolerated; usually a major drawback in broad-spectrum MMP inhibitors. ACT-03 tackles remodeling of the extracellular matrix (ECM) that takes place after a brain injury.

Today, approximately [65 million people worldwide have epilepsy](#). Commercially available anti-epileptic drugs focus on seizures; the symptoms of the disease. In clinical trials, these drugs have to date not shown anti-epileptogenic or disease modifying activity. They usually regulate neuronal excitability by modulating ion channels activity. However, they do not lessen the seizure-induced neuronal damage, which causes cognitive decline and other comorbidities, or the remodelling of the brain tissue that takes place after seizures. Changes in the brain tissue greatly contribute to triggering further seizures, often creating a vicious cycle.

Also of note, [over 30% of epileptic patients respond inadequately to currently available medications](#). Particularly critical are 'refractory epilepsies' with consequences including brain damage, comorbidities, decreased quality of life and increased risk of mortality, for which no effective medication is available. There is an unmet need to develop novel therapeutic strategies to control seizures and to slow or to stop progression of the disease.

Accure Therapeutics owns an international 'composition of matter' patent that covers the use of ACT-03 and its derivatives, which is granted in all the major pharmaceutical markets.

Accure Therapeutics' next aim is to complete the necessary preclinical pharmacodynamics, safety, pharmacology and toxicology studies required to enable testing of ACT-03 in clinical trials.

About matrix metalloproteinases (MMPs)

MMP activation represents the response to an injury and amplifies brain damage. MMPs contribute to the aberrant synaptic plasticity, blood-brain barrier dysfunction, the reorganization of the extracellular matrix (ECM), the formation of the epileptic circuitry and neuronal death – all observed in epilepsy. Past use of MMP broad-spectrum inhibitors produced severe side effects due to their lack of selectivity. Over the last few years, [emerging evidence](#) has suggested that MMP type 9 (MMP-9), and to a lesser extent MMP type-2 (MMP-2), play a prominent role in epileptogenesis when dysregulated. This indicates that highly selective [MMP-9 and MMP-2](#) are novel therapeutic targets in the treatment of epilepsy.

About Accure Therapeutics

Accure Therapeutics is a private translational R&D engine at clinical stage in the Central Nervous System (CNS) field. Based in Barcelona (Spain), it was launched in 2020 with a Series A funding led by Alta Life Sciences Spain I and supported by the Centre for Technological and Industrial Development (CDTI). This European company with an international mindset boasts a unique portfolio of three new chemical entity programs pursuing innovative targets - with potential to accommodate others. Accure aims to develop new disease modifying drugs to treat serious conditions such as optic neuritis, multiple sclerosis, Parkinson's disease and epilepsy. With an experienced business and scientific team, Accure Therapeutics is one of the few companies that operate in an agnostic fashion on initial science to deliver cutting-edge drugs in CNS.

<https://accure.health/>

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