Small Molecule Inhibitors for the Treatment of Epilepsy

The solution is a potential new therapeutic target related to inhibition of specific regulators of the WNT pathway that can prevent and/or treat epilepsy.

What is the Problem?

Epilepsy is a neurological disorder characterized by persistent, unprovoked seizures that affects approximately 50 million people worldwide. Current treatments for epilepsy aim to eliminate seizures while minimizing adverse side effects of antiseizure drugs (ASDs). Preclinical mouse seizure and epilepsy models and behavioral models are typically used to screen investigational ASDs for the symptomatic treatment of epilepsy, seizure disorders, and other comorbid neurological conditions. Despite available in vivo models and current treatments, there is a need to identify more efficacious and better tolerated ASDs for the treatment of epilepsy.

What is the Solution?

The solution is a potential new therapeutic target related to inhibition of specific regulators of the WNT pathway that can prevent and/or treat epilepsy. Existing medications that were originally developed to increase bone deposition can be used to manipulate this target. Several of these promising compounds have been found to exhibit a high level of efficacy in preclinical mouse seizure and epilepsy models.

What is the Competitive Advantage?

The competitive advantage of this technology lies in its ability to display an unusual spectrum of anticonvulsant efficacy and superior therapeutic potential compared to current ASDs. The small molecule inhibitors are promising candidates for future Investigational New Drug (IND)-enabling studies and potentially subsequent clinical trials in patients with epilepsy. As the global epilepsy drug market is valued at $7 billion in 2023 with an expected CAGR of 3.4%, there is a significant opportunity for this technology to advance the field of epilepsy prevention and treatment.

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Category

Therapeutics/CNS
Selection of Available Technologies

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