XEN1101

XEN1101: A Novel, Next - Generation Best-in-Class KCNQ2 Modulator

A Selective KV7 Potassium Channel Modulator for the Treatment of Epilepsy. XEN1101, a KV7 potassium channel opener, for the treatment of epilepsy. Acquired XEN1101 from 1st Order Pharmaceuticals pursuant to an asset purchase agreement in April 2017. The KV7 potassium channel opener mechanism has been clinically validated as an effective adjunctive treatment for treatment-resistant focal seizures as demonstrated with ezogabine, an earlier generation KV7 opener. XEN1101's unique composition is chemically designed to improve upon potency, selectivity and PK of ezogabine, and is not expected to have ezogabine's composition-specific skin and eye pigmentary issues.

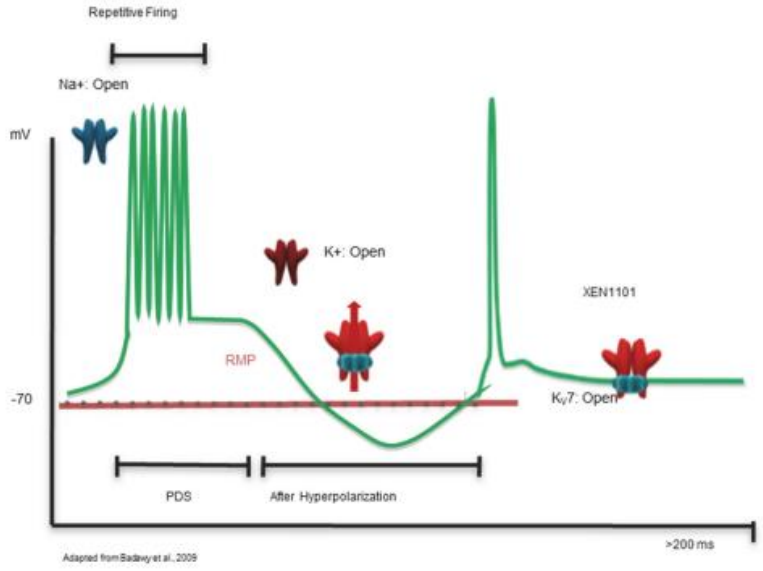
In October 2017, following acceptance of our clinical trial application, or CTA, for XEN1101 by the Medicines & Healthcare products Regulatory Agency, or MHRA, in the United Kingdom, we initiated a randomized, double-blind, placebo-controlled Phase 1 clinical trial to evaluate the safety, tolerability and pharmacokinetics of both single ascending doses, or SAD, and multiple ascending doses, or MAD, of XEN1101 in healthy subjects.

The XEN1101 Phase 1 clinical trial includes a pharmacodynamic biomarker read-out from a transcranial magnetic stimulation, or TMS, study, designed to assess XEN1101's ability and potency to modulate cortical excitability, thereby demonstrating activity in the target CNS tissue. We have completed a Phase 1a pilot TMS study in 8 healthy subjects and a double-blind, placebo-controlled, randomized cross-over Phase 1b TMS study in 20 healthy subjects.

In addition to completing both the Phase 1a pilot and Phase 1b TMS studies, we have now completed enrollment in the XEN1101 Phase 1 clinical trial using a powder-in-capsule formulation. The XEN1101 Phase 1 clinical trial included 5 SAD cohorts, a food effect cohort and 3 MAD cohorts of 66 healthy subjects. Interim results presented in May 2018 showed pharmacokinetic data confirming a half-life consistent with once daily dosing, drug exposure levels at doses tested above the EC50 in preclinical models, and safety data supporting further development of XEN1101. Xenon plans to publish the complete XEN1101 Phase 1 clinical trial results at an upcoming scientific meeting and anticipates initiating a Phase 2 clinical trial evaluating XEN1101 as a treatment for adult focal seizures in the fourth quarter of 2018.

A focal seizure is localized within the brain and can either stay localized or spread to the entire brain, which is typically categorized as a secondary generalized seizure. Focal seizures are the most common type of seizure experienced by people with epilepsy. The treatment of an individual patient with focal seizures is currently focused on reduction of seizure frequency, with seizure freedom as the ultimate goal. Focal seizures (simple, complex and secondarily generalized tonic-clonic) account for approximately 60% of seizures (GlobalData Report 2017) of which approximately 33% are considered resistant to current treatments (Epilepsy Foundation). It is estimated that the addressable population in the United States could include approximately 460,000 adults and 70,000 pediatric epilepsy patients with refractory seizures.

XEN1101 Based on Proven Mechanism of Action



Hyperexcitability Discharge

Burst Firing Suppressed