YOUR DRUG EFFICACY NOW REVEALED

Predictive Decision-making solutions for CNS Drug Discovery
Epilepsy Programs at SynapCell

Anti-Epileptic Drug Development framework

**CLINICAL DEVELOPMENT STRATEGY**

- **PARTIAL EPILEPSY**
  - Add-on therapy
- **PARTIAL EPILEPSY**
  - Monotherapy
- **GENERALIZED EPILEPSY**
  - Add-on therapy
- **GENERALIZED EPILEPSY**
  - Monotherapy

**PRECLINICAL DEVELOPMENT STRATEGY**

- **MTLE**
  - MOUSE model
- **GAERS**
  - RAT model

Epilepsy Programs at SynapCell
More people live with epilepsy than with autism spectrum disorders, Parkinson’s disease, multiple sclerosis and cerebral palsy – combined.
Focal (Partial) Epilepsy

the MTLE mouse

Clinically-relevant
Non-convulsive
Gold standard*

ANTI-epileptic
Screening
Disease-modifying
Programs

*Unique know-how in modeling MTLE makes the SynapCell MTLE mouse to date the most used and reliable on the market.
We find in SynapCell a predictive rodent model of therapy-resistant MTLE that supplements our evaluation capabilities and addresses an important recommendation of the NINDS Working Group. SynapCell provides a team of investigators that possess unique knowledge and expertise in integrated electrophysiology and epilepsy. These competencies will increase the translational potential of investigational compounds and supplement evaluation capabilities of the University of Utah for the ETSP.

Pr. Karen S. Wilcox
Chair of Pharmacology and Toxicology at University of Utah.

About the subcontract
The “Screening of Investigational Compounds to Treat, Modify or Prevent Epilepsy for the NINDS Epilepsy Therapy Screening Program” supports the conduct of preclinical pharmacological evaluations of potential therapeutic agents for the treatment of epilepsy and related disorders. This award was made on the basis of full and open competition under RFP-NIH-NINDS-16-02.

Full potential contract term: 09/30/2016 through 09/29/2021 if all term options exercised.
# Focal Epilepsy

## Selecting the MTLE mouse - Advantages

### FEATURES
- **Clinically-relevant**
- **Non-convulsive**
- Gold standard

### BENEFITS
- Predictive of in-human effect
- **Pharmacosensitive Biomarker** HPD

### PROGRAMS
- Screening
- Lead selection - validation
- Dose-dependent evaluation

- Stable MODEL over time
- Spontaneous and recurrent HPD
- Validated by a pharmacology of reference
- Partnering with a World recognized Epilepsy expert, approved by the NINDS ETSP Program
- Disease modifying
- Epileptogenesis
- Drug-refractory epilepsies, Essential Tremor
Focal Epilepsy
the MTLE mouse – Hippocampal Sclerosis

Intrahippocampal injection of Kainate

Bipolar electrode

Cell loss: CA1, CA3, hilus of DG | Dispersion of granular cells (DG)
Focal Epilepsy

Epileptogenesis – Arise of a Translational Biomarker

No epileptic activity

Epileptiform activities

the KAY mouse

HPD in the MTLE mouse

translational Biomarker
Focal Epilepsy

the MTLE mouse - Pharmacology

**BASELINE PERIOD**
(20 minutes pre-injection)

**TREATMENT PERIOD**
(20 minutes peak effect)
Focal Epilepsy

the MTLE mouse - Pharmacology

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Your Drug Efficacy. Now Revealed.