

EPILEPSY RESEARCH FOUNDATION*
SPRING 2006 AWARDS (FY06)
NEW THERAPY GRANT PROGRAM

Investigator: Thomas Sutula, M.D., Ph.D.
Institution: University of Wisconsin and NeuroGenomeX, Inc.
Title of Project: Preclinical, IND-enabling Studies of 2DG for Therapy of Epilepsy
Lay Summary: This proposal is looking for preclinical, IND-enabling experimental studies to advance development of 2-deoxy-D-glucose (2DG) as a novel anticonvulsant and disease-modifying treatment for epilepsy. Recent preliminary studies unexpectedly revealed that 2DG, a glucose analogue with antiglycolytic properties that has been used for decades as imaging tracer, has potent acute anticonvulsant and chronic antiepileptic actions including protection against progressive seizure-induced functional alterations in neural circuits. The major goal of the study is to characterize the dose response relationship of the novel anticonvulsant and antiepileptic actions of 2DG in the kindling model of chronic epilepsy. The proposed dose response studies are a component of a larger ongoing preclinical program of pharmacokinetic, toxicological, and pharmacodynamic studies anticipated to lead to an investigational new drug (IND) application in 2006 in Phase I-II clinical trials beginning in 2007.

Amount: \$100,000 for 1 year
Supported by The Patricia B. Terwilliger Family Foundation and The Terwilliger Family Foundation, Inc.

Investigator: Massoud Akhtari, Ph.D. and Jerome Engel, M.D., Ph.D.
Institution: UCLA School of Medicine
Title of Project: a-methyl-Tryptophan-conjugated Magnetanoparticles for enhanced therapy of epilepsy
Lay Summary: The primary goal of the study is to provide a basis for improved and more accessible surgical therapy of epilepsy. Currently no epileptic tissue-specific contrast agents exist for MRI imaging. The researchers will use novel epilepsy-specific contrast agents to selectively tag epileptic tissues to provide a contrast which will make tissues visible to MRI. Proper localization of epileptic tissues is of fundamental importance in understanding and successful surgical treatment of intractable epilepsies. The study methods will make it feasible to monitor epilepsies, whether or not controlled by medication, through MRI studies in an effort to identify a surrogate marker of epileptogenicity. Such a marker would permit preventive treatment for people at risk for epilepsy, and more effective early drug treatment for those with epilepsy.

Amount: \$90,000 for 1 year
Supported by the Arlene & Arnold Goldstein Family Foundation

* The Epilepsy Research Foundation is a collaboration among non-profit organizations including Epilepsy Therapy Development Project, the Epilepsy Foundation, and Finding a Cure for Epilepsy and Seizures (FACES)

**FALL 2006 AWARDS (FY07)
NEW THERAPY GRANT PROGRAM**

Investigator: Detlev Boison, PhD and David L. Kaplan, PhD
Institution: R.S. Dow Neurobiology Laboratories
Title of Project: Adenosine-releasing brain implants for epilepsy therapy
Lay Summary: Seizure activity is regulated by adenosine, an endogenous “protector” of the brain. During epileptogenesis the adenosine system gets out of order and reduced levels of adenosine contribute to seizure development. As a rational therapeutic approach, the researchers plan to reconstitute the adenosine system in epilepsy with adenosine releasing polymer-based brain implants.

Amount: \$134,000 for 2 years
Supported in part by the Arlene & Arnold Goldstein Family Foundation

Investigator: Grzegorz Bulaj, PhD
Institution: University of Utah
Title of Project: Galanin-Based therapy for refractory epilepsy
Lay Summary: The main goal of this research is to identify a galanin-based therapy for the treatment of refractory epilepsy. Since galanin possesses both anticonvulsant and antiepileptogenic activity, it may represent a novel therapy that reaches beyond the symptomatic treatment of seizures. The project will evaluate critical pharmacological and pharmaceutical properties of anticonvulsant galanin analogs that cross the blood-brain-barrier. Efficacy and toxicity studies proposed will determine the protective and safety index for these novel compounds. In addition to their anticonvulsant effects, the newly identified therapy may work to prevent, slow, or halt the damage associated with epilepsy.

Amount: \$99,899 for 1 year
Supported by The Milken Family Foundation

Investigator: Steven C. Schachter, MD
Institution: Harvard Medical School Osher Institute
Title of Project: Phase IIa open label dose escalation study to investigate the safety and tolerability of huperzine a for the treatment of epilepsy
Lay Summary: The principal investigator of the study has discovered that Huperzine A, which comes from Chinese club moss, stops seizures when given to experimental animals. In this study, he will give Huperzine A to persons with uncontrolled epilepsy to see if it is safe and well tolerated, and whether it has any beneficial effects on their seizures, mood, memory and brain function. If so, then additional studies will follow, hopefully leading in the future to FDA approval of Huperzine A for epilepsy.

Amount: \$169,541 for 1.5 years
Supported by The Milken Family Foundation