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DIAGNOSTIC FOR EPILEPSY AND FEBRILE CONVULSIONS

DIAGNOSTICS

Method to determine a patient's predisposition to sensory, motor, and neurologic disorders associated with sodium channel mutation.

TECHNOLOGY TYPE

Biomarkers
Neurology
Febrile Convulsions

STAGE OF DEVELOPMENT

Proof of concept established in animal models.

IP PROTECTION

Nationalized PCT Issued in the United States

Mutant Sodium Channel NAv1.7 and Methods Related Thereto
US7670771B2

Continuation Issued in the United States

Mutant Sodium Channel NAv1.7 and Methods Related Thereto
US9617316B2

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Reference Number: U-3520

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TECHNOLOGY SUMMARY

Febrile seizures are the most common seizure disorder in infants, with a prevalence of 2-5 percent in Europe and North America. Complications of febrile convulsions include the development of afebrile seizures and epilepsy later in life. The current standard of care involves Phenobarbital or Valproate with significant risks and potential adverse effects. Yet, simple febrile seizures have no proven risks. On the basis of risk/benefit analysis, neither long-term nor intermittent anticonvulsant therapy is indicated for children who have experienced one or more simple febrile seizures.

University of Utah researchers have created a rapid PCR-based test to determine patients' risk for neurological disorders such as seizures and epilepsy. The test compares the subject's $Na_v1.7$ haplotype to a reference haplotype. Each haplotype can be correlated with specific neurological disorders and the severity of those disorders. This approach enables patient stratification according to risk of seizure and development of curated treatment plans that mitigate unnecessary adverse events in patients with low risk for seizure.

FEATURES AND BENEFITS

- Enables early diagnosis of patients at risk for febrile seizures.
- Guides treatment of patients with febrile seizures for better outcomes.
- Provides a novel drug target for epilepsy.

RECENT PUBLICATIONS

Singh, N.A., Pappas, C., Dahle, E.J., Claes, L.R., Pruess, T.H., De Jonghe, P., Thompson, J., Dixon, M., Gurnett, C., Peiffer, A., White, H.S., Filloux, F., Leppert, M.F. (2009). A role of SCN9A in human epilepsies as a cause of febrile seizures and as a potential modifier of dravet syndrome. *PLOS Genetics. 5*(9): e000649. doi: 10.1371/journal.pgen.1000649.

INVENTOR PROFILE

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