

Gene Therapy for Epilepsy - Dissecting the Role of Somatostatin as a Neuroprotective Agent

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Abstract

Temporal lobe epilepsy is the most common form of epilepsy and also the most intractable. Gene therapy provides a promising alternative for treating seizures that are unresponsive to current medical treatment. We used the adeno-associated viral vector to deliver the neuropeptide Somatostatin (SST) directly into high epileptogenic areas of the rat brain and tested its efficacy in an electrical kindling model of epilepsy. Our preclinical results showed prevention of secondarily generalized seizures in 70% of SST over-expressing animals, with no associated inflammatory response. This study is the first to show a putative role for SST as an anticonvulsant therapeutic modality for epilepsy in vivo.

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