

Adenosine therapy reduces seizures and progression of epilepsy

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Epilepsy is characterized by recurrent seizures that present in many different ways. In some cases epileptic patients exhibit a progressive increase in both frequency and severity of seizures. Epigenetic changes such as DNA methylation have recently been implied as an underlying cause of several neurologic disorders, including epilepsy.

In this issue of the *Journal of Clinical Investigation*, Detlev Boison and colleagues at Legacy Research show an increase of DNA methylation in the hippocampi of epileptic animals. They found that increased methylation corresponded with a decrease of adenosine (ADO), which is a known anticonvulsant.

The authors used bioengineered implants to transiently deliver ADO to the brains of epileptic rats. Targeted ADO delivery to the brain reversed DNA hypermethylation and resulted in a decrease in seizures and prevented epilepsy progression.

These data indicate that therapies aimed at reducing DNA methylation in the brain have potential for the treatment and prevention of epilepsy.

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