

**C44**

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**Identifying Biomarkers for Post-Traumatic Epilepsy: A Multimodal Approach**

Post-traumatic epilepsy (PTE) is an acquired form of epilepsy that develops in 10–30% of individuals following traumatic brain injury (TBI). It is characterized by spontaneous seizure onset after a prolonged latency period, ranging from weeks to years. These seizures are often difficult to manage, and no disease-modifying treatments currently exist, highlighting the urgent need for predictive biomarkers to identify individuals at risk of developing PTE. Using the well-established controlled cortical impact (CCI) rat model of TBI, we are investigating the efficacy of behavioral, immunohistochemical, and electrophysiological biomarkers. This approach enables the integration of diverse data sets, facilitating the discovery of novel relationships across different levels of analysis. Moreover, it paves the way for earlier intervention and the development of prophylactic treatments for PTE.