Jefferys JG (2014) How does epileptic activity spread? Epilepsy Currents. 14(5):289-290 PubMed

Spread of epileptic activity

Re-interpretation based on the IPL mechanism

Epileptic activity in the hippocampus propagates with or without synaptic transmission at a speed of nearly 0.1m/s (Jefferys, 2014). Experiments showed that the longitudinal propagation of epileptic activity from one end of a neuronal order to its other end in the hippocampus takes place independent of chemical or electrical synaptic transmission (Zhang et al., 2014). Since this spread of epileptic activity occurs at a speed of 0.1 m/s and is not compatible with ionic diffusion or pure axonal conduction (Jefferys 2014; Zhang et al., 2014), it requires an explanation at the cellular and electrophysiological levels. In this regard, rapid chain propagation through the inter-postsynaptic functional LINKs (IPLs) explained by the semblance hypothesis (Vadakkan, 2015) offers a suitable explanation for a mechanism.

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