Synapse

A synapse is a structure that permits a neuron to pass an electrical or chemical signal to another neuron. Some authors generalize this concept to include the communication from a neuron to any other cell type, such as to a motor cell, although such non-neuronal contacts may be referred to as junctions (a historically older term). Santiago Ramón y Cajal proposed that neurons are not continuous throughout the body, yet still communicate with each other, an idea known as the neuron doctrine.

Synapses (at least chemical synapses) are stabilized in position by synaptic adhesion molecules (SAMs) projecting from both the pre- and post-synaptic neuron and sticking together where they overlap; SAMs may also assist in the generation and functioning of synapses.

An excitatory synapse is a synapse in which an action potential in a presynaptic neuron increases the probability of an action potential occurring in a postsynaptic cell. Neurons form networks through which nerve impulses travel, each neuron often making numerous connections with other cells. These electrical signals may be excitatory or inhibitory, and, if the total of excitatory influences exceeds that of the inhibitory influences, the neuron will generate a new action potential at its axon hillock, thus transmitting the information to yet another cell

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