



## Dynamic nanocluster organization of calcium channels within the synapse

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Chemical synapses are essential subcellular structures for information processing and storage within neuronal networks. Their function and structure can change in an activity dependent manner to maintain adequate transmission properties. Key elements to trigger evoked transmitter release are voltage gated calcium channels (VGCC) within the presynaptic membrane. VGCC are tightly linked to the pool of ready releasable vesicles and interact with several scaffold proteins within the active zone (AZ). Modulating the C-terminal structure of VGCC by expressing different splice variants or altering neuronal activity indicate that the observed dynamic of individual channels adopts in an activity dependent manner. Suggesting that not only channel kinetics but also the arrangement of VGCC within the AZ can contribute within time scales of seconds to minutes to alter presynaptic vesicle release properties.

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