

Guanine nucleotide exchange factors (GEFs) play important roles in many cellular processes, including regulation of the structural **plasticity** of dendritic spines. A GEF protein, adenomatous polyposis coli-stimulated GEF 1 (Asef1, ARHGEF4) is highly expressed in the nervous system. However, the function of **Asef1** has not been investigated in neurons.

Oh et al., present evidence showing that **Asef1** negatively regulates the synaptic localization of postsynaptic density protein 95 (PSD-95) in the excitatory synapse by inhibiting Staufen-mediated synaptic localization of PSD-95. Accordingly, Asef1 expression impairs synaptic transmission in hippocampal cultured neurons. In addition, neuronal activity facilitates the dissociation of Asef1 from Staufen in a phosphoinositide 3 kinase (PI3K)-dependent manner. Taken together, this data reveal Asef1 functions as a negative regulator of synaptic localization of PSD-95 and synaptic transmission ¹⁾.

¹⁾

Oh JY, Lim CS, Yoo KS, Park HJ, Park YS, Kim EG, Lee YS, Kaang BK, Kim HK. Adenomatous polyposis coli-stimulated GEF 1 (Asef1) is a negative regulator of excitatory synaptic function. J Neurochem. 2018 Aug 20. doi: 10.1111/jnc.14570. [Epub ahead of print] PubMed PMID: 30125942.

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