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Meeting abstract



# SAP102, a novel interaction partner of the $A_{2A}$ adenosine receptor

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Adenosine receptors are G protein-coupled receptors and are implicated in several neurological and psychiatric disorders such as Parkinson's disease, schizophrenia and Alzheimer's disease. These receptors can be distinguished by their affinity for adenosine analogues and by their preferred signal transduction pathway. The $A_{2A}$ receptor has an unusually long intracellular carboxyl terminus. We identified SAP102 (synapse-associated protein of 102 kDa) as a novel interaction partner of the adenosine $A_{2A}$ receptor. SAP102 belongs to the family of MAGUK (membrane-associated guanylate kinase-like domain) proteins. These proteins have an established function in synaptic organization, which is reflected by their modular structure. Our data demonstrate that the $A_{2A}$ receptor binds to C-terminal domains of SAP102. Furthermore we identified the responsible binding motif consisting of 5 amino acids in the receptor's C-terminus. In hippocampal neurons we observed a co-localization of both proteins especially in punctuate structures along the neurite extensions that presumably represented dendritic spines. In the next step we will use several fluorescence-based techniques in order to investigate the influence of SAP102 on the mobility and targeting of the $A_{2A}$ receptor.