Title:	Cellular and Molecular Mechanisms of the Constitutive Endocytosis of Group I mGluRs
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Abstract:	Group I metabotropic glutamate receptors (group I mGluRs) are G-protein coupled receptors (GPCRs), that trigger various signal transduction pathways upon ligand binding. Group I mGluRs having widespread distributions in the brain have been reported to be involved in various forms of synaptic plasticity, including learning and memory formation. The function and localization of the receptors are significantly dependent on their proper trafficking. Trafficking of these receptors plays a critical role in controlling the proper spatio-temporal regulation of the receptor in the neuron as well as regulation of the activity of these receptors. Misregulation of these receptors has been reported to cause various neuropsychiatric disorders such as fragile X syndrome, schizophrenia, and autism. Group I mGluRs also undergo constitutive endocytosis to maintain the basal homeostasis of the neuron. Subsequent to the internalization, mGluR5, a member of the group I mGluR family, enters the recycling compartment and return to the cell surface. However, the cellular mechanisms that govern the constitutive endocytosis of group I mGluRs and the protein machineries involved in this process have not been studied. I show here that the other member of the group I mGluR family, mGluR1 also undergoes constitutive internalization. Subsequent to the constitutive internalization, these receptors recycle back to the cell surface. We finally show that Protein kinase A (PKA) that has been implicated in the ligand-mediated internalization of these receptors, does not play any role in the constitutive internalization of mGluR1. On the other hand, although there was an indication of Homer playing a role in the constitutive internalization of the receptor, it needs to be investigated in future.
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