

P002 Visualization of differential conformational changes within the 3rd intracellular loop of the α_{2A} -adrenergic receptor for full and partial agonists by optical recording in living cells
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Stimulation of G protein-coupled receptors by an agonist leads to a conformational change and hence to a transition of the receptor into an active conformation. Conformational changes have been well established to occur within the transmembrane domain (TM) III and VI and could have ramifications into the 3rd intracellular loop, which is one of the coupling regions for G-proteins. Using the Flash-tetracysteine-Tag technology in combination with CFP we have developed a Fluorescence-resonance-energy-transfer (FRET) approach that allows to measure conformational changes of a GPCR in living cells during agonist induced receptor activation on a millisecond time scale. The small size of the novel fluorophore compared to GFP allows a more flexible positioning of the fluorophore within the receptor of choice. **Here we report**, for the first time in living cells, differences in conformational changes in specific locations of the third intracellular loop of the α_{2A} -Adrenergic-receptor when the receptor is stimulated with full or partial agonists.