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Interaction between the third intercellular loop of human 5-HT_6 serotonin receptor and G protein alpha subunit

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Serotonin (5-HT; 5-hydroxytryptamine) exerts multiple effects on central nervous system as well as behaviors such as mood and appetite. The signaling of serotonin is mediated by 7 families of serotonin receptors, designated 5-HT_1 to 5-HT_7. Six families of this receptor are G-protein coupled 7TM receptors, and the third intracellular loop of these receptors is proposed to interact with specific types of G-proteins. To investigate the specific interaction between the third intracellular loop of 5-HT_6 with G□s, we have constructed a chimera protein that represent the third intracellular loop of 5-HT_6 within a leucine zipper motifs. In addition an alpha subunit of human G-protein that interact with 5-HT_6 was cloned into a bacterial expression vector. The two proteins were expressed in *E. coli* and purified in homogeneity. The interaction of the prepared proteins was examined by ELISA assay. The affinity between the two proteins and effect of insertion mutations were discussed.