P006 Crystallization of membrane proximal structural domain in $GABA_A$ receptor α1 subunit overexpressed in *Escherichia coli*

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The $GABA_A$ receptor belongs to the ligand gated ion channel superfamily (LGICS) that mediates most of the rapid synaptic transmission in CNS. The prevalent LGICS receptor structural model relied on the soluble X-ray crystallographic structure of acetylcholine binding protein which is largely putative in nature. Previously, we successfully overexpressed in *Escherichia coli*, and identified two adjacent β-rich independent structural domains, Q28-E165 and C166-L296, in human $GABA_A$ receptor α1 subunit.

In this report, recombinant C166-L296 fragment, the reported β-rich membrane proximal structural domain, has been purified into homogeneity, and crystallized in ammonium dihydrogen phosphate, 0.1M Tris buffer at pH 8.5 and 0.2% beta-octyl-D-glucopyranoside in the presence of receptor ligand, diazepam, by using sitting drop vapor diffusion method. The protein crystals appeared as octahedron in shape at the concentration 15 mg/ml.

Our result support the existence of a stable structural domain in the C166-L296 fragment and provide a chance to obtain X-ray diffraction data for three dimensional structural investigations on the LGICS superfamily.