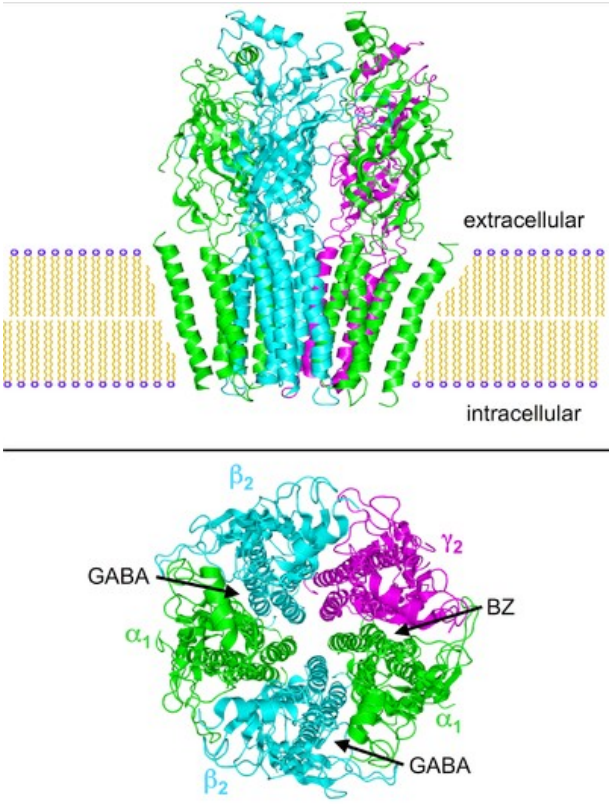
About protein GABRA1

The $GABA_A$ receptor is a ligand-gated ion channel in the postsynaptic membrane of neurons. Its endogenous ligand is γ-aminobutyric acid (GABA), the major inhibitory neurotransmitter in the brain. Upon activation, the $GABA_A$ receptor selectively conducts negatively charged ions of chlorine, Cl^- , through its pore, resulting in hyperpolarization of the neuron. This causes an inhibitory effect on neuron by diminishing the chance of its firing (i.e., nerve pulses generation).



At least 16 distinct subunits of $GABA_A$ receptors have been identified, named α1, β2, γ2, etc. GABRA1 is the alpha 1 subunit of the $GABA_A$ receptors.

The active site of the $GABA_A$ receptor is the binding site for GABA and several drugs such as benzodiazepines, barbiturates, alcohol, inhaled anaesthetics, among others.

Inhibition of neuronal firing by drugs acting at the $GABA_A$ receptor causes a reduction of anxiety in the patient (an anxiolytic effect) while stronger inhibition induces sleep (sedation) and in extreme cases of overdose, may result in death because neurons do not fire.