10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

GABA A Receptor α4 Polyclonal Antibody

Catalog # AP63680

Product Information

Application	WB, IHC-P
Primary Accession	P48169
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	61623

Additional Information

Gene ID	2557
Other Names	GABRA4; Gamma-aminobutyric acid receptor subunit alpha-4; GABA(A) receptor subunit alpha-4
Dilution	WB~~WB 1:1000-2000, IHC 1:100-200 IHC-P~~WB 1:1000-2000, IHC 1:100-200
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

Protein Information

Name	GABRA4 (HGNC:4078)
Function	Alpha subunit of the heteropentameric ligand-gated chloride channel gated by gamma-aminobutyric acid (GABA), a major inhibitory neurotransmitter in the brain (PubMed:35355020). GABA-gated chloride channels, also named GABA(A) receptors (GABAAR), consist of five subunits arranged around a central pore and contain GABA active binding site(s) located at the alpha and beta subunit interface(s) (PubMed:35355020). When activated by GABA, GABAARs selectively allow the flow of chloride anions across the cell membrane down their electrochemical gradient (PubMed:35355020). GABAARs containing alpha-4 are predominantly extrasynaptic, contributing to tonic inhibition in dentate granule cells and thalamic relay neurons (By similarity). Extrasynaptic alpha-4-containing GABAARs control levels of excitability and network activity (By similarity). GABAAR containing alpha-4-beta-3- delta subunits can simultaneously bind GABA and histamine where histamine binds at the interface of two neighboring beta subunits, which may be involved in the regulation of sleep and wakefulness (PubMed:35355020).
Cellular Location	Cell membrane {ECO:0000250|UniProtKB:Q9D6F4}; Multi-pass membrane

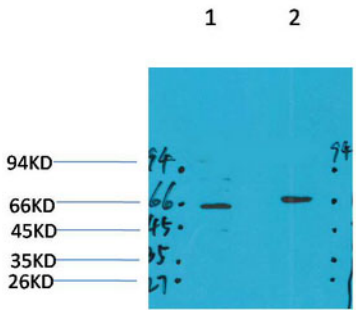
protein {ECO:0000269|PubMed:35355020, ECO:0007744|PDB:7QN5}. Postsynaptic cell membrane; Multi-pass membrane protein {ECO:0000269|PubMed:35355020, ECO:0007744|PDB:7QN5}

Tissue Location Expressed in the brain. {ECO:0000250|UniProtKB:Q9D6F4}

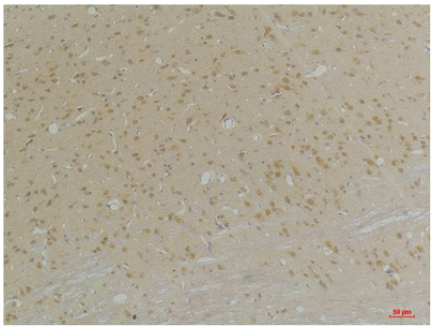
Background

GABA, the major inhibitory neurotransmitter in the vertebrate brain, mediates neuronal inhibition by binding to the GABA/benzodiazepine receptor and opening an integral chloride channel.

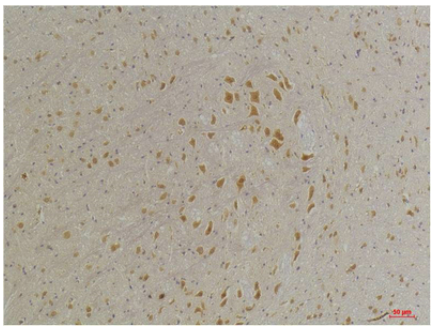
Images



Western blot analysis of 1) Mouse Brain Tissue, 2)Rat Brain Tissue with GABA A Receptor α4 Rabbit pAb diluted at 1:2,000.



Immunohistochemical analysis of paraffin-embedded Rat BrainTissue using GABA A Receptor α4 Rabbit pAb diluted at 1:200.



Immunohistochemical analysis of paraffin-embedded Mouse BrainTissue using GABA A Receptor α4 Rabbit pAb diluted at 1:200.