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CHRNA7 antibody - N-terminal region

Rabbit Polyclonal Antibody
Catalog # AI16202

Product Information

Application	WB
Primary Accession	P36544
Other Accession	NM_000746, NP_000737
Reactivity	Human, Mouse, Rat, Bovine
Predicted	Human, Mouse, Rat, Chicken, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	56449

Additional Information

Gene ID	1139;89832
Alias Symbol	NACHRA7, CHRNA7-2
Other Names	Neuronal acetylcholine receptor subunit alpha-7, CHRNA7, NACHRA7
Format	Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.
Reconstitution & Storage	Add 100 ul of distilled water. Final anti-CHRNA7 antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles.
Precautions	CHRNA7 antibody - N-terminal region is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CHRNA7 (HGNC:1960)
Synonyms	NACHRA7
Function	Component of neuronal acetylcholine receptors (nAChRs) that function as pentameric, ligand-gated cation channels with high calcium permeability among other activities. nAChRs are excitatory neurotrasnmitter receptors formed by a collection of nAChR subunits known to mediate synaptic transmission in the nervous system and the neuromuscular junction. Each nAchR subunit confers differential attributes to channel properties, including activation, deactivation and desensitization kinetics, pH sensitivity, cation permeability, and binding to allosteric modulators (PubMed:15609996, PubMed:33735609, PubMed:8145738). CHRNA7 forms homopentameric

	neuronal acetylcholine receptors abundantly expressed in the central nervous system, characterized by fast desensitization and high calcium permeability (PubMed:31560909, PubMed:33735609, PubMed:38382524, PubMed:8145738). Also forms heteropentamers with CHRNB2, mainly expressed in basal forebrain cholinergic neurons. Involved in the modulation of calcium- dependent signaling pathways and influences the release of neurotransmitters, including dopamine, glutamate and GABA (PubMed:33239400). Also expressed in non-neuronal cells such as immune cells like lymphocytes, monocytes and macrophages (PubMed:12508119, PubMed:16968406, PubMed:25259522). In T cells, activation induces metabotropic signaling that results in an increase of intracellular Ca2+ concentrations, independent of ionotropic receptor functions (PubMed:17709503). In macrophages, required for acetylcholine-mediated inhibition of TNF and other inflammatory cytokine release (PubMed:12508119). Once activated by acetylcholine, nicotine or other agonists, selectively inhibits production of pro-inflammatory cytokines while leaving anti-inflammatory cytokines undisturbed (PubMed:12508119, PubMed:25259522). Stimulates the cholinergic anti-inflammatory pathway, controlling inflammation by inhibiting NFKB nuclear translocation and activating the JAK2-STAT3 pathway, independently of ion channel activity (PubMed:16968406, PubMed:25259522). Also expressed in the urothelium where it modulates reflex bladder activity by increasing intracellular calcium through internal stores and decreasing basal ATP release (By similarity).
Cellular Location	Postsynaptic cell membrane {ECO:0000250|UniProtKB:Q05941}; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein. Note=TMEM35A/NACHO promotes its trafficking to the cell membrane (PubMed:27789755). RIC3 promotes its trafficking to the cell membrane (By similarity) {ECO:0000250|UniProtKB:Q05941, ECO:0000269|PubMed:27789755}
Tissue Location	Expressed in neuronal cells (PubMed:8145738). Expressed in macrophages (at protein level) (PubMed:12508119)

Background

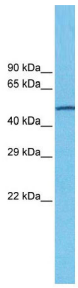
After binding acetylcholine, the AChR responds by an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma membrane. The channel is blocked by alpha-bungarotoxin.

References

Peng X.,et al.Mol. Pharmacol. 45:546-554(1994).
Logel J.,et al.Submitted (DEC-1995) to the EMBL/GenBank/DDBJ databases.
Elliott K.J.,et al.J. Mol. Neurosci. 7:217-228(1996).
Groot Kormelink P.J.,et al.FEBS Lett. 400:309-314(1997).
Groot Kormelink P.J.,et al.Submitted (JAN-1998) to the EMBL/GenBank/DDBJ databases.

Images

Host: Rabbit
Target Name: CHRNA7
Sample Tissue: MDA-MB-435S Cell lysates
Antibody Dilution: 1.0µg/ml



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