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CHRNA7 Antibody
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP51984

Specification

CHRNA7 Antibody - Product Information

Application	**WB, E**
Primary Accession	P36544
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**50 KDa**

CHRNA7 Antibody - Additional Information

Gene ID 1139;89832

Other Names
Neuronal acetylcholine receptor subunit alpha-7, CHRNA7, NACHRA7

Dilution
WB~~1:1000
E~~N/A

Format
0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%

Storage
Store at -20 °C.Stable for 12 months from date of receipt

CHRNA7 Antibody - 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)

CHRNA7 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

CHRNA7 Antibody - Images

CHRNA7 Antibody - 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.

CHRNA7 Antibody - 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.