

Product datasheet for **TA32881**

Chrna1 Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	WB
Recommended Dilution:	WB: 1:200-1:2000
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide EHETRLVAKLFKD(C), corresponding to amino acid residues 22-34 of rat nAChRa1. Extracellular, N-terminus.
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: Phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.025% NaN ₃ .
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	cholinergic receptor nicotinic alpha 1 subunit
Database Link:	NP_077811 Entrez Gene 1134 Human Entrez Gene 11435 Mouse Entrez Gene 79557 Rat P25108



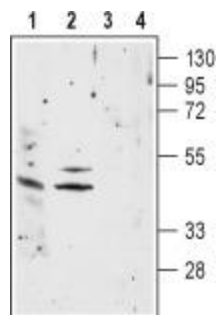
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Background:

Acetylcholine, released by cholinergic neurons, activates two groups of acetylcholine receptors (AChRs); muscarinic AChRs (mAChRs) which belong to the superfamily of G-protein coupled receptors (GPCRs) and nicotinic AChRs (nAChRs) which belong to the ligand-gated ion channel superfamily. nAChRs also respond to nicotine, hence their name. To date, 17 different but related subunits of nAChRs have been identified and cloned. They consist of α subunits ($\alpha 1$ -10), which is responsible for the binding of ligands. In fact, this subunit includes a Cys-loop in the first extracellular domain that is required for agonist binding. The other subunits responsible for making up the active receptor are the β ($\beta 1$ -4), γ , δ and ϵ subunits. Structurally, all subunits have the following: a conserved large extracellular N-terminal domain, conserved transmembrane domains, a variable cytoplasmic loop and a fourth transmembrane domain with a short extracellular C-terminal domain. An active nAChR is generally a heteropentamer (homopentamers also exist) of these various subunits organized around a central pore. All α subunits are expressed in neuronal cells except for the $\alpha 1$ subunit which is specifically expressed in skeletal muscle. Indeed, two different nAChR structural entities with the following stoichiometry are observed in this tissue: ($\alpha 1$) $_2$ $\beta 1\delta$ in fetal muscle cells and ($\alpha 1$) $_2$ $\beta 1\epsilon$ at mature neuromuscular synapses. The $\alpha 1$ extracellular domain contains the main immunogenic region, a region against which a large fraction of autoantibodies against nAChR is directed in the autoimmune disease myasthenia gravis (MG). This autoimmune disease is characterized by the malfunction of neuromuscular transmission as a result of nonfunctional nAChRs, leading to defective signaling at the neuromuscular junction. Due to its central role in muscle contraction and autonomic nervous system, nAChRs have evolved to be important targets of toxins secreted by plants, insects and animals. One prominent toxin affecting $\alpha 1$, in addition to other subunits, is α -bungarotoxin, a snake toxin which blocks nAChRs.

Synonyms:

ACHRA; ACHRD; CHNRA; CHRNA; CMS2A; FCCMS; SCCMS

Product images:


Western blot analysis of rat skeletal muscle (lanes 1 and 3) and mouse C2C12 myoblasts (lanes 2 and 4): 1, 2. Anti-Nicotinic Acetylcholine Receptor $\alpha 1$ (extracellular) antibody, (1:200). 3, 4. Anti-Nicotinic Acetylcholine Receptor $\alpha 1$ (extracellular) antibody, preincubated with the control peptide antigen.