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Product datasheet for TA328885

Chrna7 Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	FC, IHC, WB
Recommended Dilution:	WB: 1:200-1:2000; IHC: 1:100-1:3,000; FC: 1:50-1:600
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)KELVKNYNPLER, corresponding to amino acid residues 31-42 of rat nAChRa7. 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% NaN3.
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 7 subunit
Database Link:	NP_036964 Entrez Gene 1139 HumanEntrez Gene 11441 MouseEntrez Gene 25302 Rat Q05941

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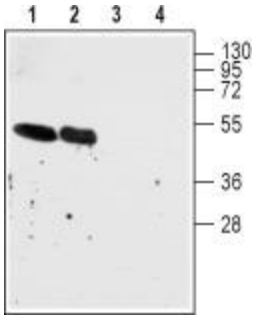
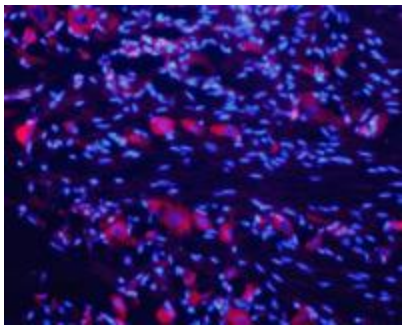
Background: Acetylcholine, released by cholinergic neurons, activates two groups of acetylcholine receptors (AChRs); muscarinic AChRs (mAChRs) which belong to the superfamily of G-protein coupled receptors (GPCRs) and nicotinic AChRs (nAChRs) which belong to the ligand-gated ion channel superfamily. nAChRs also respond to nicotine, hence their name1. These channel receptors are usually non-selective cation channels activated upon ligand binding which ultimately leads to the depolarization of postsynaptic cell membranes.To date, 17 different but related subunits of nAChRs have been identified and cloned. They consist of a subunits (a1-10), 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 Ã? (Ã?1-4), ?, d and e subunits3. Structurally, all subunits have the following: a conserved large extracellular N-terminal domain, 3 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 pore1. However, the a7 subunit mainly forms homomeric functional structures, although functional channels have been observed with its association with a5, Ã?2 or Ã?3 subunits.Interestingly, the a7 nAChR is the only subunit to be activated by two endogenous ligands: acetylcholine and choline.All a subunits are expressed in neuronal cells except for the a1 subunit which is specifically expressed in skeletal muscle. They are also expressed in non-neuronal cells such as bronchial epithelial cells, as well lymphocytes. The diversity of these receptors and their functional organization gives rise to unique properties and functions. The a4Ã?2 receptor composition makes up a high affinity nicotinic receptor. In fact, its upregulation (mainly expressed by the increase of functional receptors at the membrane and not expression per se) is responsible for the increased appearance of binding sites following nicotine administration.a7 nAChR seems to be involved in the impairment of sensory gating in schizophrenic individuals. Indeed, many polyphormisms have been detected in the gene promoter of the receptor. There is also an association of the receptor with nociception as it, along with a2 and a10 subunits are expressed in DRGs, the nociceptive center.

Synonyms: CHRNA7-2; NACHRA7

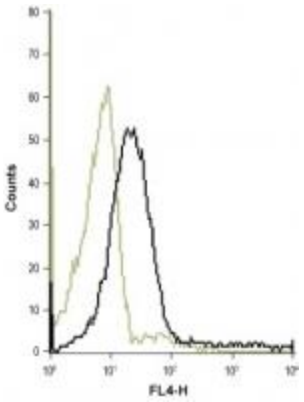
Product images:



Western blot analysis of rat (lanes 1 and 3) and mouse (lanes 2 and 4) brain cell lysates: 1, 2. Anti-Nicotinic Acetylcholine Receptor a7 (extracellular) antibody, (1:200). 3, 4. Anti-Nicotinic Acetylcholine Receptor a7 (extracellular) antibody, preincubated with the control peptide antigen.



Expression of Nicotinic Acetylcholine Receptor a7 in rat DRG. Immunohistochemical staining of rat dorsal root ganglion (DRG) frozen sections using Anti-Nicotinic Acetylcholine Receptor a7 (extracellular) antibody, (1:200). nAChRa7 (red staining) is expressed in DRG neurons. Hoechst 33342 is used as the counterstain (blue).



Indirect flow cytometry analysis in live intact Jurkat (human T cell leukemia) cell line: green line, Cells + goat-anti-rabbit-Cy5. black line, Cells + Anti-Nicotinic Acetylcholine Receptor a7 (extracellular) antibody, (1:25) + goat-anti-rabbit-Cy5.