

Product datasheet for **TA32887**

Chrnb2 Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	IF, WB
Recommended Dilution:	WB: 1:200-1:2000; FC: 1:50-1:600
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)EDFDNMKKVRLP, corresponding to amino acid residues 96-107 of rat nAChR α 2. 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 beta 2 subunit
Database Link:	NP_062170 Entrez Gene 1141 Human Entrez Gene 11444 Mouse Entrez Gene 54239 Rat P12390



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Background:

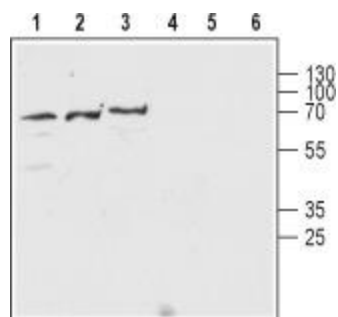
Acetylcholine, released by cholinergic neurons, activates two groups of acetylcholine receptors (AChRs); muscarinic AChRs (mAChRs) which belong to the superfamily of G-protein coupled receptors (GPCRs) and nicotinic AChRs (nAChRs) which belong to the ligand-gated ion channel superfamily. nAChRs also respond to nicotine, hence their name. To date, 17 different but related subunits of nAChRs have been identified and cloned. They consist of a 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, 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 of these various subunits organized around a central pore. While most β subunits are neuronal, the $\beta 1$ subunit forms functional receptors along with other subunits in the muscle. The diversity of these receptors and their functional organization gives rise to unique properties and functions. The $\alpha 4\beta 2$ 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. Animal studies have shown that nAChR-related mechanisms are involved in attention function. Indeed $\alpha 4\beta 2$ nAChR seems to also be involved in attention-deficit hyperactivity disorder (ADHD), a disease distinguished by a lack of attention, distractibility and hyperactivity. The $\alpha 4\beta 2$ and $\alpha 7$ nAChRs appear to be critical in rats for attention and working memory. Also, a $\beta 2$ specific agonist was shown to reduce impulsivity, hyperactivity and attention deficits in adults with ADHD5. This same receptor subtype may also be involved in Parkinson's disease (PD) as smoking and $\alpha 4\beta 2$ nAChR agonists show beneficial effects in PD.

Synonyms:

EFNL3; nAChRB2

Note:

This antibody was tested in live cell imaging. Please see IF/ICC data for detail.

Product images:

Western blot analysis of SH-SY5Y human neuroblastoma cell lysate (lanes 1 and 4) and rat (lanes 2 and 5) and mouse (lanes 3 and 6) brain lysate: 1-3. Anti-Nicotinic Acetylcholine Receptor $\beta 2$ (extracellular) antibody, (1:200). 4-6. Anti-Nicotinic Acetylcholine Receptor $\beta 2$ (extracellular) antibody, preincubated with the control peptide antigen.



Expression of Nicotinic Acetylcholine Receptor β 2 in rat PC12 cells. Immunocytochemical staining of live intact rat pheochromocytoma PC12 cells. A. Cells were stained with Anti-Nicotinic Acetylcholine Receptor β 2 (extracellular) antibody, (1:100), followed by goat anti-rabbit-AlexaFluor- 594 secondary antibody (red). B. Cell nuclei were visualized using Hoechst 33342 (blue). C. Live view of the cells.