abcam

ab233717

Anti-Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 antibody [6D3A10]

Mouse Monoclonal Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 antibody. Suitable for Flow Cyt, WB, ICC/IF and reacts with Human samples. Immunogen corresponding to Recombinant Fragment Protein within Human CHRNA3 aa 1-250.

Image updates are in progress. Products remain available and covered by the Abcam Product Promise. Learn more.

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human CHRNA3 aa 1-250. The exact immunogen used to generate this antibody is proprietary information. Database link P32297
Clone number	6D3A10
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/200 - 1/400
Notes	-

WB

Tested

Species	Human
Dilution info	1/500 - 1/2000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/200 - 1/1000
Notes	-

Target data

See full target information CHRNA3

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:31488329, PubMed:31708116). CHRNA3 forms heteropentameric neuronal acetylcholine receptors with CHRNB2 and CHRNB4, with CHRNA5, and CHRNB3 as accesory subunits (PubMed:20881005, PubMed:8663494). CHRNA3:CHRNB4 being predominant in neurons of the autonomic ganglia, it is known as ganglionic nicotinic receptor (PubMed:31488329). CHRNA3:CHRNB4 or CHRNA3:CHRNA5:CHRNB4 play also an important role in the habenulo-interpeduncular tract, modulating the mesolimbic dopamine system and affecting reward circuits and addiction (By similarity). Hypothalamic CHRNA3:CHRNB4 nAChR activation by nicotine leads to activation of POMC neurons and a decrease in food intake (By similarity). Also expressed in the

urothelium where it modulates reflex bladder activity by increasing intracellular calcium through extracellular influx and basal ATP release (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The Nicotinic Acetylcholine Receptor alpha 3 also known as CHRNA3 is a subunit of the nicotinic acetylcholine receptors important for mediating synaptic transmission. This protein with a mass of approximately 57 kDa forms one part of a pentameric complex which functions as an ion channel. It is widely expressed in the central and peripheral nervous systems contributing to the signaling mechanisms in neurons. CHRNA3 in conjunction with other nicotinic receptor subunits plays a role in neurotransmitter release exerting control over calcium and sodium ion influx that affects neuron excitability and response.
Biological function summary	CHRNA3 serves as a critical element of neurotransmission playing a part in the nicotine-induced dopaminergic signaling pathways. Often forming a complex with other subunits like beta-2 and beta-4 it modulates synaptic plasticity and influences behavioral processes such as addiction and attention. This subunit composition affects receptor specificity and sensitivity determining how neurons respond to acetylcholine and nicotine.
Pathways	The involvement of CHRNA3 in cholinergic signaling pathways is significant. It contributes to the role of nicotinic acetylcholine receptors in the addictive properties of substances like nicotine. Interaction with proteins such as CHRNB2 (nicotinic acetylcholine receptor beta-2 subunit) exemplifies how CHRNA3 participates in modulating synaptic strength and integration in the central nervous system. Its regulatory activity in these pathways demonstrates its importance in maintaining the balance of neurotransmitter systems.

Associated diseases and disorders	Aberrations in CHRNA3 expression or function link to several neuropsychiatric and neurodegenerative conditions. It associates with nicotine dependence and lung cancer where alterations in receptor activity influence disease progression. In these contexts CHRNA3 interacts with proteins like CHRNB4 further implicating its role in pathological nicotine dependence and suggesting potential for targeted intervention strategies.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

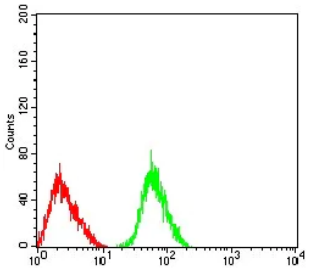
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

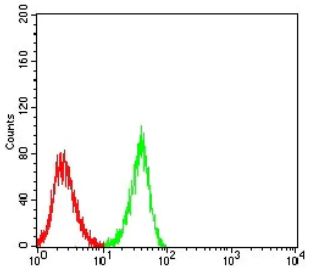
4 product images



Flow Cytometry - Anti-Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 antibody [6D3A10] (ab233717)

Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 Flow Cytometry staining using mouse Anti-Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 antibody

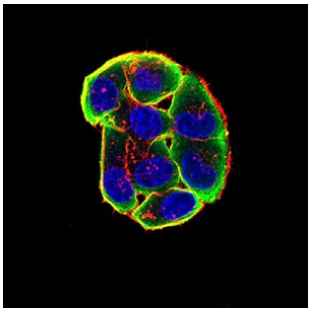
Flow cytometric analysis of SK-N-SH (human neuroblastoma cell line) cells labeling Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 using ab233717 at 1/200 dilution (green) compared with a negative control (red).



Flow Cytometry - Anti-Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 antibody [6D3A10] (ab233717)

Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 Flow Cytometry staining using mouse Anti-Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 antibody

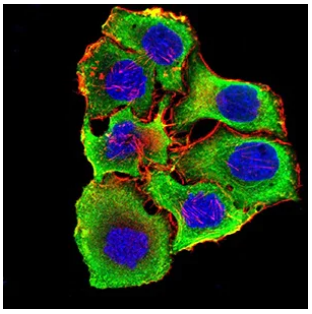
Flow cytometric analysis of SH-SY5Y (human neuroblastoma cell line from bone marrow) cells labeling Nicotinic Acetylcholine Receptor alpha using ab233717 at 1/200 dilution (green) compared to a negative control (red).



Immunocytochemistry/ Immunofluorescence - Anti-Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 antibody [6D3A10] (ab233717)

Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 antibody

HeLa (human epithelial cell line from cervix adenocarcinoma) cells stained for Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 using ab233717 at 1/200 dilution in ICC/IF.
Blue: DRAQ5 fluorescent DNA dye.
Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin.



Immunocytochemistry/ Immunofluorescence - Anti-Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 antibody [6D3A10] (ab233717)

Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 antibody

SMMC-7721 (human hepatocarcinoma cell line) cells stained for Nicotinic Acetylcholine Receptor alpha 3/CHRNA3 using ab233717 at 1/200 dilution in ICC/IF.
Blue: DRAQ5 fluorescent DNA dye.
Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.