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ProductInformation

MONOCLONAL ANTI-NICOTINIC ACETYLCHOLINE RECEPTOR, α1 SUBUNIT, CLONE mAb61
Purified Rat Immunoglobulin

Product Number **N 7658**

Product Description

Monoclonal Anti-Nicotinic Acetylcholine Receptor, α1 subunit (IgG2a rat isotype) was produced using denatured nicotinic acetylcholine receptors from the electric eel *Electrophorus* as the immunogen[1].

Monoclonal Anti-Nicotinic Acetylcholine Receptor, α1 subunit recognizes an epitope with the sequence 371-386 of the α1 subunit of muscle nicotinic acetylcholine receptor.[2] It binds to the native and denatured α1 subunit of the nicotinic acetylcholine receptor and may be used in RIA, immunohistochemistry and immunoblotting.[3] The antibody reacts with eel, mouse and human tissues.

Nicotinic acetylcholine receptors (AChR) are members of a gene superfamily of ligand-gated ion channels which includes the homologuous $GABA_A$ receptors, glycine receptors and 5-HT_3 serotonin receptors,[4,5] but not the structurally dissimilar ligand-gated ion channels comprising the glutamate[6] or ATP receptors.[7,8] It is likely that all receptors in the AChR superfamily are comprised of five homologous subunits oriented around a central ion channel.[3]

AChR's were first characterized in the skeletal muscles and their structural properties were initially characterized in using AChR's from the homologous electric organ tissue of the *Torpedo* rays.[3,9,10] The functional and structural characterization of neuronal AChR's developed later due to their lower concentrations in more heterogenous tissues.

Most, if not all, subunits that form the AchR's have now been cloned and expressed. Although more is known now about the structure and function of the neuronal AChR's still little is known about the physiological roles of the many subtypes.

AChR's are now being associated with a growing number of diseases. Thus more research is required to determine the physiological function and role of the AChR subtypes as well as the receptors themselves in the hopes of discovering new treatments for these pathologies.

Reagents

Monoclonal Anti-Nicotinic Acetylcholine Receptor, α1 subunit is supplied at a concentration of approximately 5 mg/ml in 10 mM phosphate buffered saline containing 10 mM sodium azide as a preservative.

Precautions and Disclaimer

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution.
Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

The recommended working dilution is 1:3,000 – 1:30,000 for immunoblotting and immunohistochemistry.

The moles of *Torpedo californa* electric organ muscle-type receptor α-bungarotoxin binding sites bound per liter of antibody stock solution is measured using a liquid phase RIA as described by Lindstrom, J., et al.,[11] and by a solid phase RIA using goat anti-rat IgG bound to microwell plates. Antibody dilutions for these assays were 1:5,000 – 1:1,000,000.
Lot specific titers are given in the certificate of analysis.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilution by titration test.

References

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