

Product Information

Anti-Muscarinic Acetylcholine Receptor (M₃), Rat Developed in Rabbit, Affinity Isolated Antibody

Product Number **M 0194**

Product Description

Anti-Muscarinic Acetylcholine Receptor (M₃) was developed in rabbit using a synthetic peptide (C)TLAKRFALKTRSQITKRKR corresponding to residues 461-479 of the 3rd intracellular loop of rat M₃ as the immunogen. This sequence is identical in human, mouse, bovine and pig. The antibody was affinity isolated on immobilized immunogen.

Anti-Muscarinic Acetylcholine Receptor (M₃) recognizes Muscarinic Acetylcholine Receptor (M₃) by immunoblotting with rat brain lysate.

Muscarinic receptors are members of the G protein-coupled receptor family. Five subtypes (M₁-M₅) of muscarinic receptors have been identified. M₁, M₂ and M₃ activate phospholipases A₂, C or D, or tyrosine kinase and M₄ and M₅ attenuate adenylate cyclase or augment phospholipase A₂.

Muscarinic receptors are expressed throughout the CNS with M₂-receptors enriched in the cerebellum, pons/medulla and thalamus/hypothalamus whereas M₁-receptors are enriched in hippocampus, striatum and olfactory tubule. M₃-receptor is expressed in brain, eye, and heart. ESTs have been isolated from brain, colon, fetus, lung, and prostate libraries.

Muscarinic receptors have various presynaptic and postsynaptic effects that are important in both information processing and plastic changes in CNS function. The M₃ subtype triggers contraction through an interaction with G(q) proteins, stimulating phosphoinositide hydrolysis and mobilizing Ca²⁺. In contrast, M₂-receptor activation modulates contraction by preventing relaxation or by potentiating M₃-receptor-mediated contractions, enhancing heterologous desensitization.³ Anticholinergic agents are the most widely used therapy for urge incontinence. M₃-receptors appear to be the most functionally important and mediate direct contraction of the detrusor muscle.⁴

Reagent

The antibody is supplied as lyophilized powder from phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 0.05% sodium azide as preservative.

Precautions and Disclaimer

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

Preparation Instructions

Reconstitute the lyophilized vial with 0.05 ml or 0.2 ml deionized water, depending on the package size. Further dilutions should be made using a carrier protein such as BSA (1%).

Storage/Stability

The reconstituted solution can be stored at 2-8 °C for up to 2 weeks. For extended storage, freeze in working aliquots. Avoid repeated freezing and thawing. Storage in "frost-free" freezers is not recommended. Centrifuge before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

The recommended working dilution is 1:200 for immunoblotting.

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

References

1. Tobin, A.B. and Nahorski, S.R., Rapid agonist-mediated phosphorylation of M₃-muscarinic receptors revealed by immunoprecipitation., *J. Biol. Chem.*, **268**, 9817-23 (1993).
2. Shi, H., et al., The M₃-receptor-mediated K⁺ current (IKM3), a G(q) protein-coupled K⁺ channel., *J. Biol. Chem.*, **279**, 21774-21778 (2004).

3. Ehlert, F. J., Pharmacological analysis of the contractile role of M₂ and M₃ muscarinic receptors in smooth muscle. *Receptors Channels*, **9**, 261-277 (2003).
4. Chapple, C. R., Muscarinic receptor subtypes and management of the overactive bladder., *Urology*, **60**, (Suppl 1), 82-88 (2002).

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