

Product Information

Anti-Glutamate Receptor 4a, Metabotropic (mGluR4a)

Developed in Rabbit
IgG Fraction of Antiserum

Product Number **G 7919**

Product Description

Anti-Glutamate Receptor 4a, Metabotropic (mGluR4a) is developed in rabbit using KLH conjugated synthetic peptide, (CGGLETPALATKQTYV-TYTNHAI) corresponding to amino acids 893-912 of the C-terminus of rat brain mGluR4a, with a CGG added to the peptide's N-terminus for covalent linkage to KLH as the immunogen. This amino acid sequence is identical in human except at position 895 where A replaces T. There is species cross-reactivity with rat and mouse, and it is predicted to cross-react with human. The antibody was protein A purified.

Anti-Glutamate Receptor 4a, Metabotropic (mGluR4a) specifically recognizes mGluR4a, Mr 100-110kDa in rat brain microsomal preparation by immunoblotting. The immunizing sequence is not contained in mGluR4b.¹

Glutamate is the main excitatory neurotransmitter in the brain. It acts on ligand-gated receptor channels—termed NMDA, AMPA and kainate receptors--involved in the fast excitatory synaptic transmission. Glutamate has also been shown to regulate ion channels and enzymes producing second messengers via specific receptors coupled to G-proteins, called metabotropic glutamate receptors. These receptors are important mediators of excitatory amino acid neurotransmission.²

The metabotropic glutamate receptors consist of eight subtypes (mGluR1-8) divided into three groups (I-III).^{3, 4} Group I mGluRs (mGluR1 and mGluR5) are coupled to phospholipase C and intracellular calcium mobilization, whereas both groups II (mGluR2 and mGluR3) and III (mGluR4, -6, -7, and -8) inhibit adenylyl cyclase.^{4,5} The role of the metabotropic receptors in pain and pathology is being studied for therapeutic potential.⁶ The mGluR1 receptors have been implicated in post-ischemic neuronal injury, and antagonists of Group I appear to have a neuroprotective effect.^{3,5} In contrast, activation of group II and Group III receptors has been shown to be neuroprotective.^{3,7,8}

Reagents

Anti-Glutamate Receptor 4a, Metabotropic (mGluR4a) is supplied as a solution in 0.1M Tris-glycine, pH 7.4, 0.15M NaCl, 0.05% sodium azide before the addition of glycerol to 30%.

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 hazardous and safe handling.

Storage/Stability

The solution is stable for 2 years at -20°C from date of shipment. For maximum recovery of product, centrifuge the vial. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

The recommended working dilution is 0.5-2 µg/ml (~1:1000) for immunoblotting.

Note: In order to obtain best results and assay sensitivities of different techniques and preparations, we recommend determining optimal working dilutions by titration test.

References

1. Phillips, T., et al., *Neuroreport*, **8**, 3349-3354 (1997).
2. Pin, J-P and Duvoisin R., *Neuropharmacology*, **34**, 1-26 (1995).
3. Flor, P.J., et al., *Adv. Exp. Med. Biol.*, **513**, 197-223 (2002).
4. Knopfel, T. and Grandes, P., *Cerebellum*, **1**, 19-26 (2002).

5. Pellegrini-Giampietro, D.E., Trends Pharmacol. Sci., **24**, 461-470 (2003).
6. Spooren, W., et al., Behav. Pharmacol., **14**, 257-277 (2003).
7. Faden, A.I., J. Neurotrauma, **14**, 885-895 (1997).
8. Bruno, V., et al., J Neurosci., **20**, 6413-6420 (2000).

mct/jk 6/1/2004