3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-Purinergic Receptor P2X7, (extracellular)-FITC antibody produced in rabbit
affinity isolated antibody, lyophilized powder

Product Number **P8997**

Product Description

Anti-Purinergic Receptor P2X7 (extracellular)-FITC is developed in rabbit using a synthetic peptide, KKGWMDPQSKGIQTGRC, corresponding to residues 136–152 of mouse P2X7 receptor as the immunogen. The epitope is identical in human and rat; in bovine, 14/17 residues are identical. The antibody was affinity isolated on immobilized immunogen.

Anti-Purinergic Receptor P2X7-FITC specifically recognizes purinergic receptor P2X7 protein in flow cytometry analysis of Jurkat T cells.

The P2X receptors belong to the ligand-gated ion channel family and are activated by extracellular ATP. The family of P2X receptors consists of at least seven isoforms: P2X1–P2X7.[1,2,3] All P2X subunits can assemble to form homomeric or heteromeric functional channels with the exception of P2X6, which only seems to function as part of a heteromeric complex.[4-9] The P2X7 receptor is found in cells of the immune system, particularly antigen presenting cells, and microglia. The P2X7 receptor mediates the release of pro-inflamatory cytokines, stimulation of transcription factors, and may also have an important role in apoptosis.[5]

In the CNS, P2X receptors are involved in sensory transmission, sensory-motor integration, motor and autonomic control, and overall CNS homeostasis.[10] Further, P2X receptors are implicated in modulating cortical plasticity, such as hippocampal plasticity.[11] Recent evidence suggests P2X receptors in the spinal cord facilitate GABA release and may be important in processing nociceptive information.[12] Peripherally, P2X receptors modulate processes involved in the physiological turnover of squamous epithelial cells[13] and also modulate osteoclasts to stimulate bone resorption.[14]

The P2X receptors in the spinal cord may be implicated in the induction or mediation of prolonged persistent pain.[15] Further, there may be a fine balance between function and disease with P2X modulation of cellular proliferation and apoptosis.[16,17]

Recent advances have allowed researchers to begin to learn about the structure and function of these purinergic receptors. However, much remains to be determined about their precise cellular localization, *in vivo* physiological roles, roles in disease states, and possible routes to modulate their structure/function to ameliorate effects of disease.

Reagents

Anti-Purinergic Receptor P2X7-FITC is supplied lyophilized from phosphate buffered saline, pH 7.4, with 1% bovine serum albumin and 0.05 % sodium azide as preservative.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute the lyophilized vial with 0.05 mL of deionized water. Antibody dilutions should be made in buffer containing 1% bovine serum albumin.

Storage/Stability

Lyophilized powder can be stored intact at room temperature for several weeks. For extended storage, it should be stored at –20 °C or below. The reconstituted solution can be stored at 2–8 °C for up to 2 weeks. For longer 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. Centrifuge all antibody preparations before use (10,000 × *g* for 5 minutes). Working dilution samples should be discarded if not used within 12 hours.

Product Profile

The recommended working dilution is 5–10 μL antibody per 1×10^6 cells for flow cytometry.

Note: In order to obtain best results in different techniques and preparations, it is recommended to determine optimal working concentration by titration test.

References

1. Prasad, M. et al., J. Physiol., **573**, 667 (2001).
2. Florenzano, F. et al., Neuroscience, **115**, 425 (2002).
3. Ashcroft, F.M. et al., Ion Channels and Disease, Ed 1, (2000).
4. Khakh, B.S. et al., Pharmacol. Rev., **53**, 107 (2001).
5. Ding, Y. et al., J. Auton. Nerv. Syst., **81**, 289 (2000).
6. Le, K.T. et al., J. Neurosci., **18**, 7152 (1998).
7. Robertson, S.J. et al., Curr. Opin. Neurol., **11**, 378 (2001).
8. Dunn, P.M. et al., Prog. Neurobiol., **65**, 107 (2001).
9. Kim, M. et al., EMBO J., **20**, 6347 (2001).
10. Kanijan, R. et al., J. Comp. Neurol., **407**, 11 (1999).
11. Inoue, K., Pharmacol. Res., **38**, 323 (1998).
12. Hugel, S., and Schlichter, R., J. Neurosci., **20**, 2121 (2000).\
13. Groschel-Stewart, U. et al., Cell Tissue Res., **296**, 599 (1999).
14. Naemsch, L.N. et al., J. Cell Sci., **112**, 4425 (1999).
15. Zheng, J.H., and Chen, J., Neurosci. Lett., **7**, 41 (2000).
16. Harada, H. et al., Kidney Int., **57**, 949 (2000).
17. Coutinho-Silva, R. et al., Am. J. Physiol., **276**, C1139 (1999).

SG,MCT,PHC,MAM 05/18-1