Revision 4

#13809 Store at -20C

P2X7 Receptor (E1E8T) Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H	Endogenous	78	Rabbit IgG	#Q99572	5027

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

P2X7 Receptor (E1E8T) Rabbit mAb recognizes endogenous levels of total P2X7 receptor protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu462 of human P2X7 receptor protein.

Background

P2X purinergic receptors are ATP-gated ion channels involved in physiological processes that include inflammation, afferent sensory signaling, and sympathetic motor nerve activity. Seven different vertebrate genes (*P2RX1-P2RX7*) encode for individual receptor protein subunits (1). All P2X subunit proteins share similar protein domain structure, but can differ in overall protein length from 384 to 595 amino acids. Each P2X subunit is composed of amino- and carboxy-terminal intracellular domains, two transmembrane domains, and a large extracellular loop that contains ten evenly spaced cysteines and multiple glycosylation sites (2). P2X receptors are found in a variety of cell types and tissues, including central and peripheral nervous system neurons and glial cells, autonomic and sensory neurons, bone, muscle, and hematopoietic tissues (1).

Purinoceptor 7 (P2X7) is a homotrimer involved in diverse cellular responses, including inflammation mediated by phospholipase A2, phospholipase D, MAP kinase, and NF-κB activation (3,4). Research studies suggest that P2X7 receptors promote apoptosis by regulating release of IL-1β in neurodegenerative disorders associated with inflammation (5). Microglial P2X7 receptors may contribute to neuroinflammatory responses in the ATP-rich site of neuronal injury (6) and mediate inflammatory pain (7, 8). Association studies demonstrate a possible causal link between *P2RX7* gene polymorphisms and susceptibility to bipolar affective disorder and major depressive disorder (9,10).

Background References

1. North, R.A. (2002) *Physiol Rev* 82, 1013-67.
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3. North, R.A. and Surprenant, A. (2000) *Annu Rev Pharmacol Toxicol* 40, 563-80.
4. Skaper, S.D. et al. (2010) *FASEB J* 24, 337-45.
5. Bernardino, L. et al. (2008) *J Neurochem* 106, 271-80.
6. Volonté, C. et al. (2003) *Curr Drug Targets CNS Neurol Disord* 2, 403-12.
7. Chessell, I.P. et al. (2005) *Pain* 114, 386-96.
8. Dell'Antonio, G. et al. (2002) *Neurosci Lett* 327, 87-90.
9. Barden, N. et al. (2006) *Am J Med Genet B Neuropsychiatr Genet* 141B, 374-82.
10. Lucae, S. et al. (2006) *Hum Mol Genet* 15, 2438-45.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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Limited Uses