Revision 1

#70659 Store at -20C

P2X4 Receptor (D9R1H) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB	H	Endogenous	62	Rabbit IgG	#Q99571	5025

Product Usage Information

Application	Dilution
Western Blotting	1:1000

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

P2X4 Receptor (D9R1H) Rabbit mAb recognizes endogenous levels of total P2X4 receptor protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro120 of human P2X4 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).

P2X purinoceptor 4 (P2X4) trimers are expressed at the cell surface where they act as ligand-gated ion channels for monovalent and divalent cations (3). P2X4 receptors contribute to regulation of synaptic strength through participation in the formation of long-term potentiation (4,5). Research studies indicate that P2X4 receptor expression may play a role in influencing alcohol-drinking behavior and conferring protection to cardiac myocytes during heart failure (6,7). Additional studies show that microglial P2X4 receptors are upregulated during nerve-injury associated neuropathic pain (8).

Background References

1. North, R.A. (2002) *Physiol Rev* 82, 1013-67.
2. Valera, S. et al. (1994) *Nature* 371, 516-9.
3. Abbracchio, M.P. et al. (2009) *Trends Neurosci* 32, 19-29.
4. Fujii, S. (2004) *J Pharmacol Sci* 94, 103-6.
5. Sim, J.A. et al. (2006) *J Neurosci* 26, 9006-9.
6. Franklin, K.M. et al. (2014) *Front Neurosci* 8, 176.
7. Yang, T. et al. (2014) *Circ Heart Fail* 7, 510-8.
8. Tsuda, M. et al. (2013) *Front Cell Neurosci* 7, 191.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

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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