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P2RX7 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP5674b

Product Information

Application	WB, IHC-P, E
Primary Accession	Q99572
Other Accession	NP_002553.2
Reactivity	Mouse, Human
Predicted	Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB21714
Calculated MW	68585
Antigen Region	563-592

Additional Information

Gene ID	5027
Other Names	P2X purinoceptor 7, P2X7, ATP receptor, P2Z receptor, Purinergic receptor, P2RX7
Target/Specificity	This P2RX7 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 563-592 amino acids of human P2RX7.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	P2RX7 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	P2RX7
Function	ATP-gated nonselective transmembrane cation channel that requires high millimolar concentrations of ATP for activation (PubMed:17483156, PubMed:25281740, PubMed:9038151). Upon ATP binding, it rapidly opens to

	allow the influx of small cations Na(+) and Ca(2+), and the K(+) efflux (PubMed:17483156, PubMed:20453110, PubMed:28235784, PubMed:39262850). Also has the ability to form a large pore in the cell membrane, allowing the passage of large cationic molecules (PubMed:17483156). In microglia, may mediate NADPH transport across the plasma membrane (PubMed:39142135). In immune cells, P2RX7 acts as a molecular sensor in pathological inflammatory states by detecting and responding to high local concentrations of extracellar ATP. In microglial cells, P2RX7 activation leads to the release of pro- inflammatory cytokines, such as IL-1beta and IL-18, through the activation of the NLRP3 inflammasome and caspase-1 (PubMed:26877061). Cooperates with KCNK6 to activate NLRP3 inflammasome (By similarity). Activates death pathways leading to apoptosis and autophagy (PubMed:21821797, PubMed:23303206, PubMed:28326637). Activates death pathways leading to pyroptosis (By similarity).
Cellular Location	Cell membrane; Multi-pass membrane protein {ECO:0000250|UniProtKB:Q64663}
Tissue Location	Widely expressed with highest levels in brain and immune tissues.

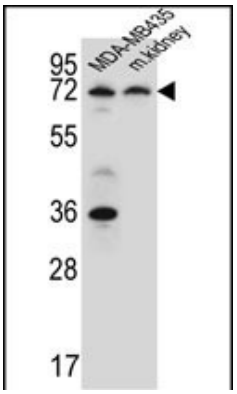
Background

P2RX7 belongs to the family of purinoceptors for ATP. This receptor functions as a ligand-gated ion channel and is responsible for ATP-dependent lysis of macrophages through the formation of membrane pores permeable to large molecules. Activation of this nuclear receptor by ATP in the cytoplasm may be a mechanism by which cellular activity can be coupled to changes in gene expression.

References

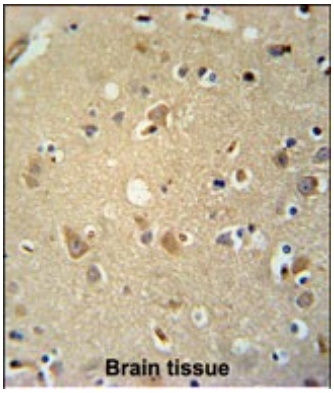
Kim, M., et al. EMBO J. 20(22):6347-6358(2001)
Gartland, A., et al. J. Bone Miner. Res. 16(5):846-856(2001)
Gu, B.J., et al. J. Biol. Chem. 276(14):11135-11142(2001)
Buell, G.N., et al. Recept. Channels 5(6):347-354(1998)
Rassendren, F., et al. J. Biol. Chem. 272(9):5482-5486(1997)

Images



P2RX7 Antibody (C-term) (Cat. #AP5674b) western blot analysis in MDA-MB435 cell line and mouse kidney tissue lysates (15ug/lane).This demonstrates the P2RX7 antibody detected the P2RX7 protein (arrow).

P2RX7 Antibody (C-term) (Cat. #AP5674b) immunohistochemistry analysis in formalin fixed and paraffin embedded human brain tissue followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the P2RX7 Antibody (C-term) for immunohistochemistry.



Clinical relevance has not been evaluated.

Citations

- P2X7 Receptor Antagonism Attenuates the Intermittent Hypoxia-induced Spatial Deficits in a Murine Model of Sleep Apnea Via Inhibiting Neuroinflammation and Oxidative Stress.