

**P2RX7 Antibody**  
**Catalog # ASC11867****Specification**

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**P2RX7 Antibody - Product Information**

Application	WB, IF, ICC, E
Primary Accession	<a href="#">Q99572</a>
Other Accession	<a href="#">NP_002553</a> , <a href="#">300068987</a>
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	Predicted: 34, 47, 65 kDa

Application Notes	Observed: 54 kDa KDa P2RX7 antibody can be used for detection of P2RX7 by Western blot at 1 - 2 µg/ml. Antibody can also be used for immunocytochemistry starting at 5 µg/mL. For immunofluorescence start at 20 µg/mL.
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**P2RX7 Antibody - Additional Information**

Gene ID 5027

**Target/Specificity**

P2RX7; P2RX7 antibody is human, mouse, and rat reactive. Multiple isoforms of P2RX7 are known to exist.

**Reconstitution & Storage**

P2RX7 antibody can be stored at 4°C for three months and -20°C, stable for up to one year.

**Precautions**

P2RX7 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**P2RX7 Antibody - Protein Information**

**Name** P2RX7

**Function**

ATP-gated nonselective transmembrane cation channel that requires high millimolar concentrations of ATP for activation (PubMed:<a href="http://www.uniprot.org/citations/17483156" target="\_blank">17483156</a>, PubMed:<a href="http://www.uniprot.org/citations/25281740" target="\_blank">25281740</a>, PubMed:<a href="http://www.uniprot.org/citations/9038151" target="\_blank">9038151</a>). Upon ATP binding, it rapidly opens to allow the influx of small cations Na(+) and Ca(2+), and the K(+) efflux (PubMed:<a href="http://www.uniprot.org/citations/17483156" target="\_blank">17483156</a>, PubMed:<a href="http://www.uniprot.org/citations/20453110" target="\_blank">20453110</a>, PubMed:<a href="http://www.uniprot.org/citations/28235784" target="\_blank">28235784</a>),

PubMed:<a href="http://www.uniprot.org/citations/39262850" target="\_blank">39262850</a>). Also has the ability to form a large pore in the cell membrane, allowing the passage of large cationic molecules (PubMed:<a href="http://www.uniprot.org/citations/17483156" target="\_blank">17483156</a>). In microglia, may mediate NADPH transport across the plasma membrane (PubMed:<a href="http://www.uniprot.org/citations/39142135" target="\_blank">39142135</a>). In immune cells, P2RX7 acts as a molecular sensor in pathological inflammatory states by detecting and responding to high local concentrations of extracellular ATP. In microglial cells, P2RX7 activation leads to the release of pro- inflammatory cytokines, such as IL-1 $\beta$  and IL-18, through the activation of the NLRP3 inflammasome and caspase-1 (PubMed:<a href="http://www.uniprot.org/citations/26877061" target="\_blank">26877061</a>). Cooperates with KCNK6 to activate NLRP3 inflammasome (By similarity). Activates death pathways leading to apoptosis and autophagy (PubMed:<a href="http://www.uniprot.org/citations/21821797" target="\_blank">21821797</a>, PubMed:<a href="http://www.uniprot.org/citations/23303206" target="\_blank">23303206</a>, PubMed:<a href="http://www.uniprot.org/citations/28326637" target="\_blank">28326637</a>). Activates death pathways leading to pyroptosis (By similarity).

### Cellular Location

Cell membrane; Multi-pass membrane protein {ECO:0000250|UniProtKB:Q64663}

### Tissue Location

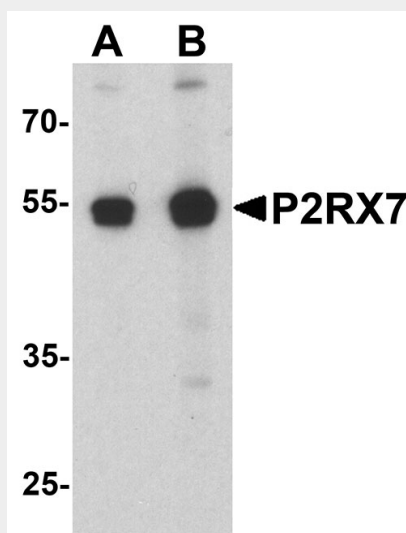
Widely expressed with highest levels in brain and immune tissues.

### P2RX7 Antibody - Protocols

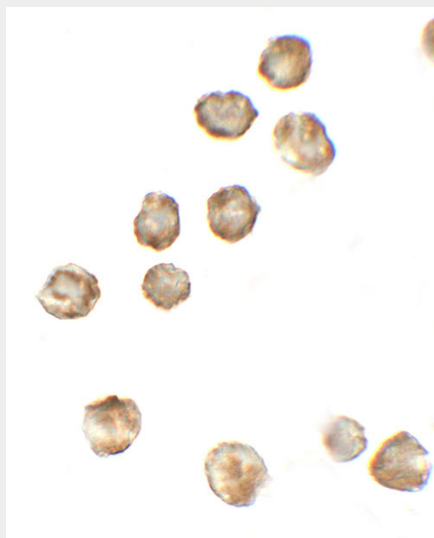
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

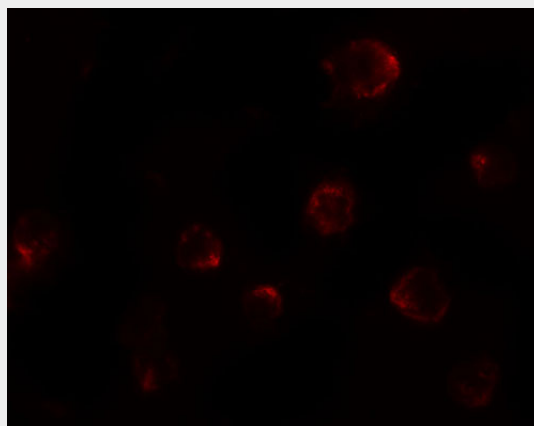
### P2RX7 Antibody - Images



Western blot analysis of P2RX7 in 3T3 cell lysate with P2RX7 antibody at (A) 1 and (B) 2  $\mu\text{g/ml}$ .



Immunocytochemistry of P2RX7 in 3T3 cells with P2RX7 antibody at 5  $\mu\text{g/mL}$ .



Immunofluorescence of P2RX7 in 3T3 cells with P2RX7 antibody at 20  $\mu\text{g/mL}$ .

### **P2RX7 Antibody - Background**

The purinergic receptor P2X ligand-gated ion channel 7 (P2RX7) belongs to the family of purinoceptors for ATP (1). 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 (1,2). 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 (2). Recent studies have suggested that P2RX7 may play a key role in immune-mediated diseases such as rheumatoid arthritis (3) as well as neuropsychiatric disorders (4).

### **P2RX7 Antibody - References**

Surprenant A, Rassendren F, Kawashima E, et al. The cytosolic P2Z receptor for extracellular ATP identified as a P2X receptor (P2X7). *Science* 1996; 272:735-8.  
North RA. Molecular physiology of P2X receptors. *Physiol. Rev.* 2002; 82:1013-67.  
Labasi JM, Petrushova N, Donovan C, et al. Absence of the P2X7 receptor alters leukocyte function and attenuates an inflammatory response. *J. Immunol.* 168:6436-45.  
Basso AM, Bratcher NA, Harris RR, et al. Behavioral profile of P2X7 receptor knockout mice in animal models of depression and anxiety; relevance for neuropsychiatric disorders. *Behav. Brain Res.* 2009; 198:83-90.