abcam

ab195356

Anti-P2X7 antibody [1F11]

Key facts

Isotype	IgG2b
Host species	Rat
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	1F11
Purification technique	Affinity purification Protein G
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Mouse
Dilution info	10 µg/mL
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	5 µg/mL
Notes	-

Target data

See full target information P2rx7

Function	ATP-gated nonselective transmembrane cation channel. Requires high millimolar-range concentrations of ATP to become activated (PubMed:9849870). ATP binding trigers the rapid opening of the channel and allows Na(+) and Ca(2+) influx and K(+) efflux (By similarity). Has also the ability to form a large pore in the cell membrane, allowing the passage of large cationic molecules (PubMed:25281740). In microglia, may mediate NADPH transport across the plasma membrane (By similarity). 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 (PubMed:29958799). Activates death pathways leading to apoptosis and autophagy (By similarity). Activates death pathways leading to pyroptosis (PubMed:26572062). Involved in the homeostatic wound healing response to tissue injury, a multistep cascade that guides neutrophil migration to necrotic sites while avoiding collateral damage of healthy tissues. Senses ATP released from necrotic cells triggering activation of NLRP3 inflammasome and neutrophil adhesion to the vascular endothelium close to the injury site.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The P2X7 receptor also known as P2RX7 is a ligand-gated ion channel primarily activated by ATP. It possesses a mass of approximately 68 kDa and is mainly expressed in immune cells like macrophages and microglia. P2X7 functions as a trimer forming a pore in the cell membrane that allows the passage of ions such as calcium (Ca^{2+}) and sodium (Na^{+}) influencing cell signaling and survival. This receptor is notable for its unique ability to change permeability to larger molecules upon prolonged stimulation with ATP.
Biological function summary	The P2X7 receptor influences immune response and inflammation. It plays a role in the release of pro-inflammatory cytokines like interleukin-1β (IL-1β) therefore participating in the regulation of inflammatory and immune responses. It forms a complex with other purinergic receptors affecting processes such as apoptosis and cell proliferation. The activation of P2X7 can lead to the formation of the inflammasome a component critical for cytokine processing and release.
Pathways	The P2X7 receptor integrates into the NOD-like receptor (NLR) signaling and the purinergic signaling pathways. It interacts with proteins from these pathways including NLRP3 and pannexin-1 which contribute to inflammasome assembly and function. P2X7 also impacts intracellular signaling cascades such as the PI3K/AKT pathway influencing cellular survival and immune responses.
Associated diseases and disorders	Aberrant P2X7 receptor activity has connections to inflammatory and neurodegenerative conditions. In chronic inflammation the enhanced activity of this receptor can exacerbate diseases like rheumatoid arthritis by promoting excessive cytokine release. It is also associated with neurodegenerative disorders like Alzheimer's disease where P2X7 influences neuroinflammation and neuronal death interacting with proteins such as amyloid-beta.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

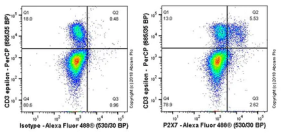
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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2 product images

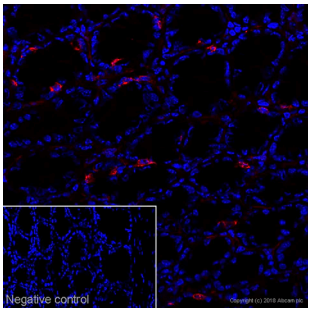


Flow Cytometry - Anti-P2X7 antibody [1F11] (ab195356)

P2X7 Flow Cytometry staining using rat Anti-P2X7 antibody

C57BL6 mouse splenocytes were incubated with Rat IgG2b, kappa monoclonal [RTK4530] (ab18541) (left) or anti-P2X7 [F11] antibody (ab195356) (right) at 10 µg/mL for 30 min at +4°C. The secondary antibody Goat Anti-Rat IgG H&L (Alexa Fluor® 488) (ab150157) was used at 1/2000 dilution for 30 min at +4°C. The cells were simultaneously stained with anti-CD3ε PerCP (10 µg/mL) (ab190299).
Acquisition of >30,000 total events were collected. Gating strategy - live lymphocytes

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Immunohistochemistry (Frozen sections) - Anti-P2X7 antibody [1F11] (ab195356)

P2X7 Immunohistochemistry (Frozen sections) staining using rat Anti-P2X7 antibody

IHC image of ab195356 staining in 10% formaldehyde fixed frozen tissue section of normal mouse large intestine.
Non-specific protein-protein interactions were blocked using TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 3% (w/v) BSA for 1h at room temperature. The section was then incubated with ab195356 (1µg/ml) in TBS containing 0.025% (v/v) Triton X-100 and 3% (w/v) BSA overnight at +4°C. The section was then incubated with ab150167 (Goat polyclonal Secondary Antibody to Rat IgG - H&L (Alexa Fluor® 647)) and DAPI for 1 hour at room temperature.

The DAPI only control (no antibody) inset shows no autofluorescence, demonstrating that any Alexa Fluor® 647 signal is derived directly from bound ab195356.

For other IHC staining systems (automated and non-automated), customers should optimize variable parameters such as antibody concentrations and incubation times.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.