

8. ANEXOS

ANEXO I. RELACIÓN DEL TRABAJO CON LOS OBJETIVOS DE DESARROLLO SOSTENIBLE DE LA AGENDA 2030

Anexo al Trabajo de Fin de Grado y Trabajo de Fin de Máster: Relación del trabajo con los Objetivos de Desarrollo Sostenible de la agenda 2030

Grado de relación del trabajo con los Objetivos de Desarrollo Sostenible (ODS).

Objetivos de Desarrollo Sostenibles	Alto	Medio	Bajo	No Procede
ODS 1. Fin de la pobreza.				X
ODS 2. Hambre cero.				X
ODS 3. Salud y bienestar.	X			
ODS 4. Educación de calidad.			X	
ODS 5. Igualdad de género.			X	
ODS 6. Agua limpia y saneamiento.			X	
ODS 7. Energía asequible y no contaminante.			X	
ODS 8. Trabajo decente y crecimiento económico.			X	
ODS 9. Industria, innovación e infraestructuras.	X			
ODS 10. Reducción de las desigualdades.			X	
ODS 11. Ciudades y comunidades sostenibles.			X	
ODS 12. Producción y consumo responsables.			X	
ODS 13. Acción por el clima.X			X	
ODS 14. Vida submarina.			X	
ODS 15. Vida de ecosistemas terrestres.			X	
ODS 16. Paz, justicia e instituciones sólidas.			X	
ODS 17. Alianzas para lograr objetivos.		X		

Descripción de la alineación del TFG/TFM con los ODS con un grado de relación más alto.

ANEXO II. ESPECIFICACIONES ANTICUERPO AB93354


abcam

Product datasheet

Anti-P2X7 antibody ab93354

★★★★★ [2 Abreviews](#) [7 References](#) [1 Image](#)

Overview

Product name	Anti-P2X7 antibody
Description	Goat polyclonal to P2X7
Host species	Goat
Tested applications	Suitable for: WB, IHC-P
Species reactivity	Reacts with: Human Predicted to work with: Mouse, Rat, Guinea pig, Dog 
Immunogen	Synthetic peptide corresponding to Human P2X7 aa 13-26 (N terminal) (Cysteine residue). Sequence: YETNKVTRIQSMNY Run BLAST with Run BLAST with
Positive control	WB: Human brain frontal cortex lysate.
General notes	<p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer	pH: 7.30 Preservative: 0.02% Sodium azide Constituents: 0.5% BSA, Tris buffered saline
Purity	Immunogen affinity purified
Purification notes	Purified from goat serum by ammonium sulphate precipitation followed by antigen affinity chromatography using the immunizing peptide.
Clonality	Polyclonal

1

Isotype IgG

Applications

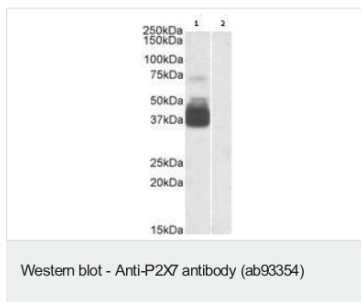
The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab93354 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★☆ (2)	Use a concentration of 1 - 3 µg/ml. Detects a band of approximately 37, 70 kDa (predicted molecular weight: 69 kDa). 1 hour primary incubation is recommended for this product.
IHC-P		Use a concentration of 3 - 6 µg/ml. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Target

Function	Receptor for ATP that acts as a ligand-gated ion channel. Responsible for ATP-dependent lysis of macrophages through the formation of membrane pores permeable to large molecules. Could function in both fast synaptic transmission and the ATP-mediated lysis of antigen-presenting cells.
Tissue specificity	Widely expressed with highest levels in brain and immune tissues.
Sequence similarities	Belongs to the P2X receptor family.
Post-translational modifications	Phosphorylation results in its inactivation. ADP-ribosylation at Arg-125 is necessary and sufficient to activate P2RX7 and gate the channel. Palmitoylation of several cysteines in the C-terminal cytoplasmic tail is required for efficient localization to cell surface.
Cellular localization	Cell membrane.

Images



All lanes : Anti-P2X7 antibody (ab93354) at 0.3 µg/ml

Lane 1 : Human brain frontal cortex lysate

Lane 2 : Human brain frontal cortex lysate with Immunising peptide

Lysates/proteins at 35 µg per lane.

Developed using the ECL technique.

Predicted band size: 69 kDa

Observed band size: 37,70 kDa

Detected by chemiluminescence.

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ANEXO III. ESPECIFICACIONES ANTICUERPO P9122

16/7/23, 8:50

Anti-Purinergic Receptor P2X7 (extracellular) antibody produced in rabbit affinity isolated antibody, lyophilized powder

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Introduzca el nombre de producto, el número de lote, etc.



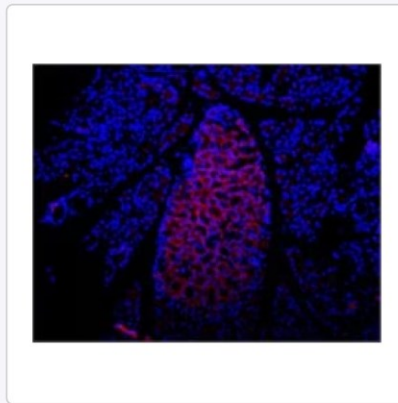
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P9122 ▶ **Sigma-Aldrich.**

Anti-Purinergic Receptor P2X₇ (extracellular) antibody produced in rabbit

★★★★★ (0) [Escriba un reseña](#)

affinity isolated antibody, lyophilized powder



[Todas las fotos \(2\)](#)

Comentarios

Sinónimos:
Anti-P2Z

Número MDL:
[MFCD06798527](#)

NACRES:
NA.41

Select an Option

Número de referencia del producto (SKU)

P9122-200UL



<https://www.sigmaaldrich.com/ES/es/product/sigma/p9122>

1/8



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sigma-aldrich.com

Product Information

Anti-Purinergic Receptor P2X7 (extracellular)

(P2Z)

Developed in Rabbit, Affinity Isolated Antibody

Product Number **P 9122**

Product Description

Anti-Purinergic Receptor P2X7 is developed in rabbit using a synthetic peptide KKGWMDPQSKGIQTGRC corresponding to residues 136-152 of mouse P2X7 receptor as the immunogen. The epitope is identical in human and rat; in bovine, 14/17 residues are identical. The antibody was affinity isolated on immobilized immunogen.

Anti-Purinergic Receptor P2X7 specifically recognizes purinergic receptor P2X7 protein in rat brain lysate and human cell lines: K562 (Chronic myelogenous leukemia); WEHI-231 (Lymphoma, B lymphocyte) and HL-60 (promyelocytic leukemia), by immunoblotting.

The P2X receptors belong to the ligand-gated ion channel family and are activated by extracellular ATP. The P2X receptors family consists of at least seven isoforms: P2X1-P2X7.^{1,2,3} All P2X subunits can assemble to form homomeric or heteromeric functional channels with the exception of P2X6, which only seems to function as part of a heteromeric complex.^{4,9} The P2X7 receptor is found in cells of the immune system, particularly antigen presenting cells, and microglia. The P2X7 receptor mediates the release of proinflammatory cytokines, stimulation of transcription factors and may also have an important role in apoptosis.⁵

In the CNS, P2X receptors are involved in sensory transmission, sensory-motor integration, motor and autonomic control and overall CNS homeostasis.¹⁰ Further, P2X receptors are implicated in modulating cortical plasticity, such as hippocampal plasticity.¹¹ Recent evidence suggests that P2X receptors in the spinal cord facilitate GABA release and may be important in processing nociceptive information.¹² Peripherally, P2X receptors modulate processes involved in the physiological turnover of squamous epithelial cells¹³ and also modulate osteoclasts to stimulate bone resorption.¹⁴

The P2X receptors in spinal cord may be implicated in the induction or mediation of prolonged persistent pain.¹⁵ Further, there may be a fine balance between function and disease with P2X modulation of cellular proliferation and apoptosis.^{16,17}

Recent advances have allowed researchers to begin to learn about the structure and function of these purinergic receptors. However, much remains to be determined about their precise cellular localization, *in vivo* physiological roles, roles in disease states and possible routes to modulate their structure/function to ameliorate effects of disease.

Reagents

The antibody is supplied lyophilized from phosphate buffered saline, pH 7.4, with 1% bovine serum albumin, and 0.05 % sodium azide as preservative.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling.

Preparation Instructions

Reconstitute the lyophilized vial with 0.05 ml or 0.2 ml deionized water, depending on the package size purchased. Antibody dilutions should be made in buffer containing 1% bovine serum albumin.

Storage/Stability

Lyophilized powder can be stored intact at room temperature for several weeks. For extended storage, it should be stored at -20 °C or below. The reconstituted solution can be stored at 2-8 °C for up to 2 weeks. For longer storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended.

If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Centrifuge all antibody preparations before use (10000 x g 5 min). Working dilution samples should be discarded if not used within 12 hours.

Product Profile

The recommended working dilution is (1:200) for immunoblotting.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Prasad, M., et al., J. Physiol., **573**, 667 (2001).
2. Florenzano, F., et al., Neuroscience, **115**, 425 (2002).
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17. Coutinho-Silva, R. et al., Am. J. Physiol., **276**, C1139 (1999).

MCT/PHC 10/04

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ANEXO IV. ESPECIFICACIONES ANTICUERPO APR-008 ANÁLOGO DEL P9122

24/7/23, 15:21 Anti-P2X7 Receptor (extracellular) Antibody | KO Validated | Alomone Labs

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Anti-P2X7 Receptor (extracellular) Antibody

Purinergic receptor P2X7, P2RX7, P2Z, ATP receptor

Applications Specifications Scientific Background

Overview

Cat #: APR-008 107 Citations

Host: Rabbit
Type: Polyclonal
Form: Lyophilized

Anti-P2X7 Receptor (extracellular) Antibody (#APR-008) is a highly specific antibody directed against an extracellular epitope of the mouse protein. The antibody can be used in western blot, indirect flow cytometry, immunohistochemistry, live cell imaging, and immunocytochemistry applications. It has been designed to recognize P2X7 purinergic receptor from mouse, rat, and human samples.

[Certificate of Analysis](#) [SDS](#)

Applications: ICC, IF, IFC, IHC, LCI, WB Reactivity: H, M, R

May also work in: IP

Application key: CBE- Cell-based ELISA, FC- Flow cytometry, ICC- Immunocytochemistry, IE- Indirect ELISA, IF- Immunofluorescence, IFC- Indirect flow cytometry, IHC- Immunohistochemistry, IP- Immunoprecipitation, LCI- Live cell imaging, NI- Neutralization, WB- Western blot
Species reactivity key: H- Human, M- Mouse, R- Rat

P2X7R/CD11b
Naive PTD 14

P2X7R/GFAP
PTD 14 PTD 14

Sham Cancer
Naive 7d 14d 21d 7d 14d 21d

P2X7R
GAPDH

Expression and upregulation of microglial P2X7 receptor in cancer.
A. Immunohistochemical staining of rat spinal dorsal horn using **Anti-P2X7 Antibody (#APR-004)** or **Anti-P2X7 (extracellular) Antibody (#APR-008)** shows that P2X7 co-localizes with CD11b, a microglia marker (two panels) and not with NeuN, a neuronal marker (lower right panel). Specificity of the antibody was tested on P2X7 knock-out mice (western blot, in upper panel). B. Western blot analysis of rat dorsal horn lysates shows that P2X7 expression increases on post-tumor day 14 (PTD 14).
Adapted from Yang, Y. et al. (2015) with permission of the Society for Neuroscience.

Specific Control Product

[P2X7 Receptor \(extracellular\) Blocking Peptide \(#BLP-PR008\)](#)

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Related Products

Products for control experiments

- Anti-P2X7 Receptor Antibody (#APR-004).** This antibody recognizes a different epitope and thus can also be used as a control for detecting P2X7.
- Anti-P2X7 Receptor (extracellular)-ATTO Fluor-550 Antibody (#APR-004-AO).** A fluorescent primary antibody. It can be used in multiplex staining studies in conjunction with any of our antibodies raised in rabbit.
- Anti-P2X7 Receptor (extracellular)-ATTO Fluor-488 Antibody (#APR-008-AG).** A fluorescent primary antibody. It can be used in colocalization studies in conjunction with any of our antibodies raised in rabbit.
- Anti-P2X7 Receptor (extracellular)-ATTO Fluor-633 Antibody (#APR-008-FR).** A fluorescent primary antibody. It can be used in multiplex staining studies in conjunction with any of our antibodies raised in rabbit.

Antibodies for live cell flow cytometry experiments

- Anti-P2X7 Receptor (extracellular)-FITC Antibody (#APR-008-F).** This FITC-conjugated antibody can be used to detect P2X7 in live

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14

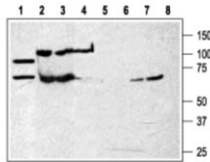
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Applications

Western blot

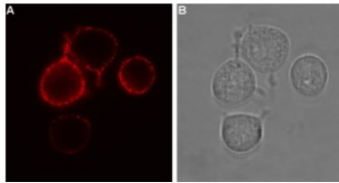


Western blot analysis of rat brain membranes (lanes 1 and 5) and human K562 chronic myelogenous leukemia cell line (lanes 2 and 6) and Mouse WEHI-231 B cell lymphoma (lanes 3 and 7) and human HL-60 promyelocytic leukemia cell line (lanes 4 and 8):

1-4. Anti-P2X7 Receptor (extracellular) Antibody (#APR-008), (1:200).

5-8. Anti-P2X7 Receptor (extracellular) Antibody, preincubated with P2X7 Receptor (extracellular) Blocking Peptide (#BLP-PR008).

Live cell imaging / Immunocytochemistry

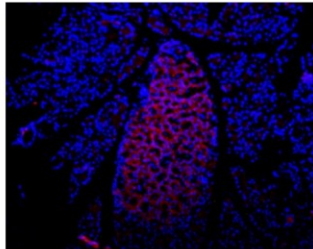


Expression of P2RX7 in rat RBL cells

Cell surface detection of P2RX7 in intact living rat basophilic leukemia (RBL) cells. A.

Extracellular staining of cells using Anti-P2X7 Receptor (extracellular) Antibody (#APR-008), (1:100) followed by goat anti-rabbit-AlexaFluor-594 secondary antibody (red). B. Live view of the cells.

Immunohistochemistry



Expression of P2RX7 in rat pancreas

Immunohistochemical staining of rat pancreas frozen section using Anti-P2X7 Receptor (extracellular) Antibody (#APR-008), (1:100), followed by mouse anti-rabbit-AlexaFluor-594 secondary antibody (red). Staining is present in endocrine cells of the *Isle of Langerhans*. Hoechst 33342 is used as the counterstain.

Immunocytochemistry

Mouse P2X7 transfected in CHO cells (1:500). (Adriouch, S., et al. (2005) *Cell. Immunol.* 236, 72.).

antibody can be used to detect P2X7 in live cell flow cytometry.

Antibodies for live cell imaging experiments

1. Anti-P2X7 Receptor (extracellular)-ATTO Fluor-488 Antibody (#APR-008-AG). This antibody is the conjugated version of #APR-008 and can be used to detect P2X7 in live cells.
2. Anti-P2X7 Receptor (extracellular)-ATTO Fluor-633 Antibody (#APR-008-FR). This antibody is the conjugated version of #APR-008 and can be used to detect P2X7 in live cells.

General Protocols

[Blocking Peptides – Controls for better results](#)

[Blocking Peptide Protocol for Western Blot \(WB\)](#)

[Sample Preparation for Cell Lines](#)

[Immunocytochemistry \(ICC\) Protocols for Fixed or Live Cells: Indirect and Direct Methods](#)

[Immunohistochemistry \(IHC\) Protocols for Frozen Sections: Indirect Methods](#)

[Flow Cytometry Protocols for Live Cells: Indirect and Direct Methods](#)

[Sample Preparation Protocols for Tissues](#)

[Western Blot \(WB\) Protocol](#)

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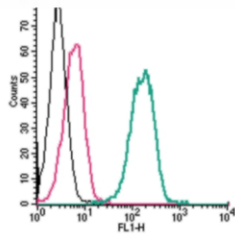
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Cell surface detection of P2X7 Receptor by indirect flow cytometry in live intact human THP-1 monocytic leukemia cells:

- Cells.
- Cells + goat-anti-rabbit-FITC.
- Cells + **Anti-P2X7 Receptor (extracellular) Antibody (#APR-008)**, (2.5µg) + goat-anti-rabbit-FITC.

The control antigen is not suitable for this application.

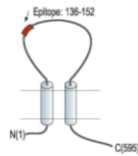
Citations (107)



Specifications



Immunogen Peptide KKGWMDPQSKGIQTGRC, corresponding to amino acid residues 136-152 of mouse P2X7 receptor (Accession [Q9Z1M0](#)). Extracellular loop.



Homology Human, rat - identical; bovine - 14/17 amino acid residues identical.

RRID AB_2040065.

Purity Affinity purified on immobilized antigen.

Form Lyophilized powder. Reconstituted antibody contains phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.05% NaN₃.

Isotype Rabbit IgG.

Standard quality control of each lot Western blot analysis.

Peptide confirmation Confirmed by amino acid analysis and mass spectrometry.

Storage before reconstitution The antibody ships as a lyophilized powder at room temperature. Upon arrival, it should be stored at -20°C.

Reconstitution 25 µl, 50 µl or 0.2 ml double distilled water (DDW), depending on the sample size.

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Concentration after reconstitution

Storage after reconstitution

The reconstituted solution can be stored at 4°C for up to 1 week. For longer periods, small aliquots should be stored at -20°C. Avoid multiple freezing and thawing. Centrifuge all antibody preparations before use (10000 x g 5 min).

Scientific Background



Resources

Regulatory Aspects of mGluRs

Ionotropic ATP (P2X) Receptors

P2X7 Receptors

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