Product Datasheet

PIEZO1 Antibody - BSA Free
NBP1-78446

Unit Size: 0.1 ml

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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Reviews: 1 Publications: 28

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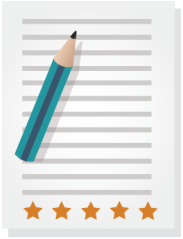
Updated 4/1/2025 v.20.1



NBP1-78446

PIEZO1 Antibody - BSA Free

Product Information

Unit Size	0.1 ml
Concentration	1 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS

Product Description

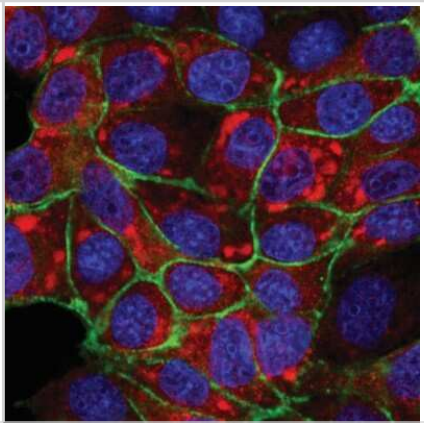
Host	Rabbit
Gene ID	9780
Gene Symbol	PIEZO1
Species	Human, Mouse, Guinea Pig
Reactivity Notes	Guinea Pig reactivity reported in scientific literature (PMID: 30324494).
Immunogen	A synthetic peptide made to an internal portion of the human PIEZO1 protein (between residues 950-1000) [UniProt Q92508]

Product Application Details

Applications	Western Blot, Flow Cytometry, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Paraffin
Recommended Dilutions	Western Blot 2 ug/ml, Flow Cytometry 1-5 ug/ml. Use reported in scientific literature (PMID 31685811), Immunohistochemistry 1:400, Immunocytochemistry/ Immunofluorescence 1:25, Immunohistochemistry-Paraffin 1:400
Application Notes	According to Gudipaty et al "only this Piezo1 antibody reliably worked for Piezo1 immunostaining, as it vanishes in cells mosaically expressing a Piezo1-shRNA-mCherry construct" (PMID: 28199303). Prior to immunostaining paraffin tissues, antigen retrieval with sodium citrate buffer (pH 6.0) is recommended.

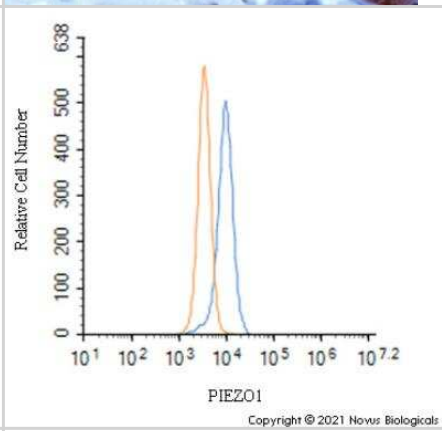
Images

Immunocytochemistry/Immunofluorescence: PIEZO1 Antibody [NBP1-78446] - PIEZO1 antibody (Goat anti-rabbit 568) was tested in MDCK cells. Nuclei and B-actin were counterstained with DAPI (blue) and phalloidin (green). Image from verified customer review.

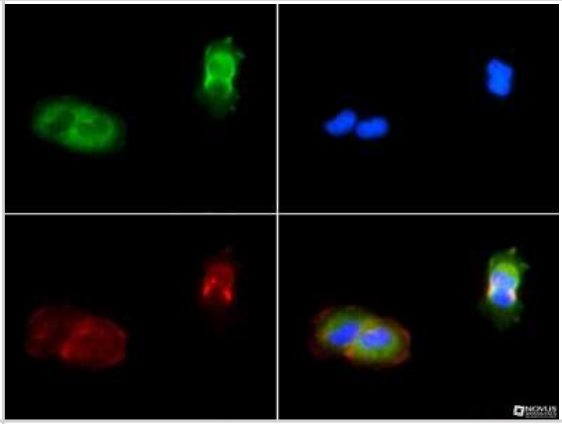


Immunohistochemistry: PIEZO1 Antibody [NBP1-78446] - Analysis of PIEZ01 in mouse epidermis using DAB with hematoxylin counterstain.

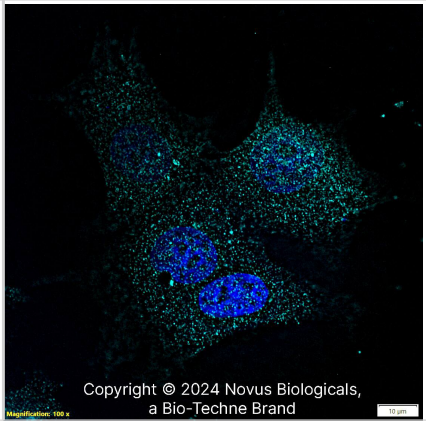
Flow Cytometry: PIEZO1 Antibody [NBP1-78446] - An intracellular stain was performed on MCF7 cells with PIEZO1 Antibody NBP1-78446 (blue) and a matched isotype control NBP2-24891 (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 1.0 ug/mL for 30 minutes at room temperature, followed by Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody, Dylight 550 (SA5-10033, Thermo Fisher).



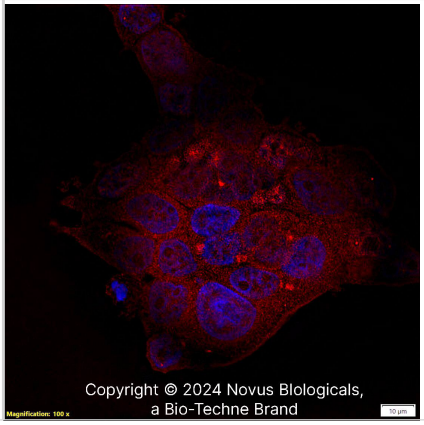
Immunocytochemistry/Immunofluorescence: PIEZO1 Antibody [NBP1-78446] - PIEZO1 antibody was tested in A431 cells with FITC (green). Nuclei and alpha-tubulin were counterstained with DAPI (blue) and Dylight 550 (red).



PIEZO1 was detected in immersion fixed MCF7 human breast cancer cell line using Rabbit anti-PIEZO1 Affinity Purified Polyclonal Antibody conjugated to DyLight 650 (Catalog # NBP1-78446C) (light blue) at 10 µg/mL overnight at 4C. Cells were stained counterstained with DAPI (blue). Cells were imaged using a 100X objective and digitally deconvolved.



PIEZO1 was detected in immersion fixed MCF7 human breast cancer cell line using Rabbit anti-PIEZO1 Affinity Purified Polyclonal Antibody conjugated to Janelia Fluor® 549 (Catalog # NBP1-78446JF549) (red) at 10 µg/mL overnight at 4C. Cells were stained counterstained with DAPI (blue). Cells were imaged using a 100X objective and digitally deconvolved.



Publications

Mao C, Yu W, Li G et Al. Effects of immediate loading directionality on the mechanical sensing protein PIEZO1 expression and early-stage healing process of peri-implant bone Biomed Eng Online 2024-03-19 [PMID: 38504231]

Austin Lai, Yung C Chen, Charles D Cox, Anthony Jaworowski, Karlheinz Peter, Sara Baratchi Analyzing the shear-induced sensitization of mechanosensitive ion channel Piezo-1 in human aortic endothelial cells. Journal of cellular physiology 2021-09-21 [PMID: 32959903]

Y Mitsuhata, T Abe, K Misaki, Y Nakajima, K Kiriya, M Kawasaki, H Kiyonari, M Takeichi, M Toya, M Sato Cyst formation in proximal renal tubules caused by dysfunction of the microtubule minus-end regulator CAMSAP3 Scientific Reports, 2021-03-12;11(1):5857. 2021-03-12 [PMID: 33712686]

Kotaro Hirano, Masaki Tsuchiya, Akifumi Shiomi, Seiji Takabayashi, Miki Suzuki, Yudai Ishikawa, Yuya Kawano, Yutaka Takabayashi, Kaori Nishikawa, Kohjiro Nagao, Eiji Umemoto, Yasuo Kitajima, Yusuke Ono, Keiko Nonomura, Hirofumi Shintaku, Yasuo Mori, Masato Umeda, Yuji Hara The mechanosensitive ion channel PIEZO1 promotes satellite cell function in muscle regeneration Life Science Alliance 2022-11-29 [PMID: 36446523]

Chang Liu, Yanan Xia, Shichen Fu, Fanyi Meng, Bingcheng Feng, Leiqi Xu, Lixiang Li, Xiuli Zuo Inhibition of Piezo1 Ameliorates Intestinal Inflammation and Limits the Activation of Group 3 Innate Lymphoid Cells in Experimental Colitis Journal of Innate Immunity 2023-09-19 [PMID: 37725937]

Bosutti A, Giniatullin A, Odnoshivkina Y et al. "Time window" effect of Yoda1-evoked Piezo1 channel activity during mouse skeletal muscle differentiation Acta Physiol (Oxf) 2021-12-01 [PMID: 34097801]

Singh A, Tijore A, Margadant F et al. Enhanced tumor cell killing by ultrasound after microtubule depolymerization Bioengineering & Translational Medicine 2021-09-01 [PMID: 34589605]

Mitchell SJ, Pardo-Pastor C, Zangle TA, Rosenblatt J Voltage-dependent volume regulation controls epithelial cell extrusion and morphology bioRxiv : the preprint server for biology 2023-03-14 [PMID: 36993671] (ICC/IF, Canine)

Zhao T, Chu Z, Chu C et al. Macrophages induce gingival destruction via Piezo1-mediated MMPs-degrading collagens in periodontitis Frontiers in Immunology 2023-05-16 [PMID: 37261355] (IHC-P, Human)

Details:
Dilution: 1:100

Yao M, Tijore A, Cheng D et al. Force- and cell state-dependent recruitment of Piezo1 drives focal adhesion dynamics and calcium entry Science advances 2022-11-11 [PMID: 36351022] (ICC/IF, Human)

Foote A, Tibbetts J, Bartley S, Thibeault S Localization of TRPV3/4 and PIEZO1/2 sensory receptors in murine and human larynges Laryngoscope Investigative Otolaryngology 2022-11-02 [PMID: 36544955] (IHC-P, Human)

Details:
Dilution used in IHC 1:200

Greenlee J, Liu K, Lopez-Cavestany M, King M Piezo1 Mechano-Activation Is Augmented by Resveratrol and Differs between Colorectal Cancer Cells of Primary and Metastatic Origin Molecules 2022-08-25 [PMID: 36080197] (FLOW, Human)

More publications at http://www.novusbio.com/NBP1-78446

Procedures

Immunohistochemistry-Paraffin protocol for PIEZO1 Antibody (NBP1-78446)

Immunohistochemistry-Paraffin Embedded Sections

Antigen Unmasking:
Bring slides to a boil in 10 mM sodium citrate buffer (pH 6.0) then maintain at a sub-boiling temperature for 10 minutes. Cool slides on bench-top for 30 minutes.

Staining:
1. Wash sections in deionized water three times for 5 minutes each.
2. Wash sections in wash buffer for 5 minutes.
3. Block each section with 100-400 ul blocking solution for 1 hour at room temperature.
4. Remove blocking solution and add 100-400 ul diluted primary antibody. Incubate overnight at 4C.
5. Remove antibody solution and wash sections in wash buffer three times for 5 minutes each.
6. Add 100-400 ul biotinylated diluted secondary antibody. Incubate 30 minutes at room temperature.
7. Remove secondary antibody solution and wash sections three times with wash buffer for 5 minutes each.
8. Add 100-400 ul Streptavidin-HRP reagent to each section and incubate for 30 minutes at room temperature.
9. Wash sections three times in wash buffer for 5 minutes each.
10. Add 100-400 ul DAB substrate to each section and monitor staining closely.
11. As soon as the sections develop, immerse slides in deionized water.
12. Counterstain sections in hematoxylin.
13. Wash sections in deionized water two times for 5 minutes each.
14. Dehydrate sections.
15. Mount coverslips.

*The above information is only intended as a guide. The researcher should determine what protocol best meets their needs. Please follow safe laboratory procedures.

Immunocytochemistry/ Immunofluorescence Protocol for PIEZO1 Antibody (NBP1-78446)
Immunocytochemistry Protocol

Culture cells to appropriate density in 35 mm culture dishes or 6-well plates.

1. Remove culture medium and wash the cells briefly in PBS. Add 10% formalin to the dish and fix at room temperature for 10 minutes.
2. Remove the formalin and wash the cells in PBS.
3. Permeablize the cells with 0.1% Triton X100 or other suitable detergent for 10 min.
4. Remove the permeablization buffer and wash three times for 10 minutes each in PBS. Be sure to not let the specimen dry out.
5. To block nonspecific antibody binding, incubate in 10% normal goat serum from 1 hour to overnight at room temperature.
6. Add primary antibody at appropriate dilution and incubate overnight at 4C.
7. Remove primary antibody and replace with PBS. Wash three times for 10 minutes each.
8. Add secondary antibody at appropriate dilution. Incubate for 1 hour at room temperature.
9. Remove secondary antibody and replace with PBS. Wash three times for 10 minutes each.
10. Counter stain DNA with DAPi if required.

Western Blot Protocol for PIEZO1 Antibody (NBP1-78446)
Western Blot Protocol

1. Perform SDS-PAGE on samples to be analyzed, loading 10-25 ug of total protein per lane.
2. Transfer proteins to PVDF membrane according to the instructions provided by the manufacturer of the membrane and transfer apparatus.
3. Stain the membrane with Ponceau S (or similar product) to assess transfer success, and mark molecular weight standards where appropriate.
4. Rinse the blot TBS -0.05% Tween 20 (TBST).
5. Block the membrane in 5% Non-fat milk in TBST (blocking buffer) for at least 1 hour.
6. Wash the membrane in TBST three times for 10 minutes each.
7. Dilute primary antibody in blocking buffer and incubate overnight at 4C with gentle rocking.
8. Wash the membrane in TBST three times for 10 minutes each.
9. Incubate the membrane in diluted HRP conjugated secondary antibody in blocking buffer (as per manufacturer's instructions) for 1 hour at room temperature.
10. Wash the blot in TBST three times for 10 minutes each (this step can be repeated as required to reduce background).
11. Apply the detection reagent of choice in accordance with the manufacturer's instructions.

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Products Related to NBP1-78446

NBP1-78446PEP	PIEZO1 Antibody Blocking Peptide
HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control

Limitations

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.

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