

Product Datasheet

TRPA1 Antibody - BSA Free NB110-40763

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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NB110-40763

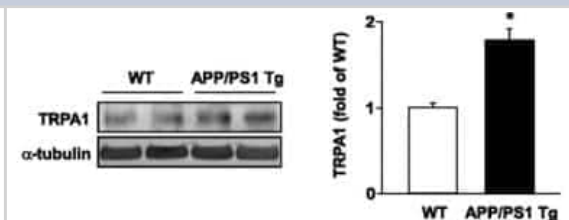
TRPA1 Antibody - BSA Free

Product Information	
Unit Size	0.1 ml
Concentration	1.0 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.05% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS
Target Molecular Weight	127.5 kDa
Product Description	
Description	Novus Biologicals Rabbit TRPA1 Antibody - BSA Free (NB110-40763) is a polyclonal antibody validated for use in IHC, WB, ELISA, Flow and ICC/IF. Anti-TRPA1 Antibody: Cited in 79 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Rabbit
Gene ID	8989
Gene Symbol	TRPA1
Species	Human, Mouse, Rat, Guinea Pig, Zebrafish
Reactivity Notes	Rat reactivity reported in scientific literature (PMID: 27748654). Zebrafish reactivity reported from a verified customer review.
Specificity/Sensitivity	Additional modified form of TRPA1 can also be detected.
Immunogen	A synthetic peptide made to a region within the N-terminus (residues 1-100) of the human TRPA1 protein. [Swiss-Prot# O75762]
Product Application Details	
Applications	Western Blot, Immunohistochemistry-Paraffin, ELISA, Flow Cytometry, Flow (Intracellular), Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen
Recommended Dilutions	Western Blot 2 ug/ml, Flow Cytometry reported in scientific literature (PMID 28990934), ELISA reported in scientific literature (PMID 29803505), Immunohistochemistry 0.5-1.0 ug/ml, Immunocytochemistry/ Immunofluorescence 1:200, Immunohistochemistry-Paraffin 1:100-1:250, Immunohistochemistry-Frozen reported in scientific literature, Flow (Intracellular)

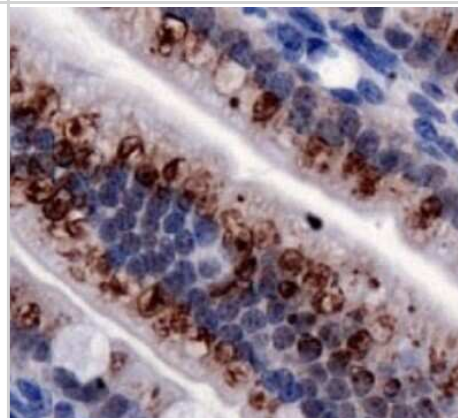


Images

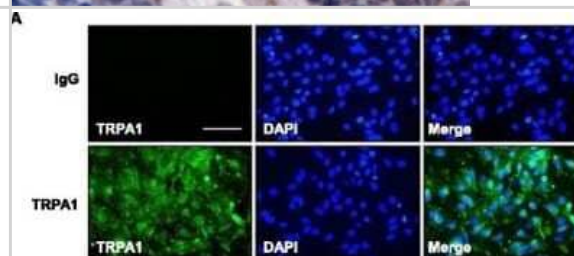
Western Blot: TRPA1 Antibody [NB110-40763] - Expression and localization of TRPA1 channels in wild-type (WT) and APP/PS1 Tg mice. Brains were harvested from WT and APP/PS1 Tg mice at 8A months old. Western blot analysis of protein levels of TRPA1 and α -tubulin. Image collected and cropped by Citeab from the following publication (Role of transient receptor potential ankyrin 1 channels in Alzheimer's disease. J Neuroinflammation (2016)) licensed under a CC-BY license.



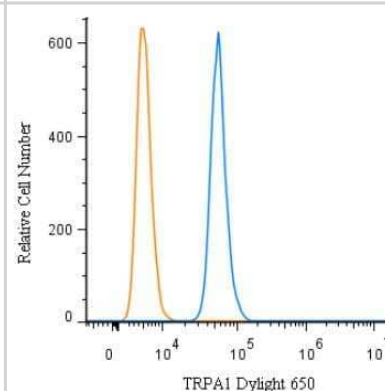
Immunohistochemistry: TRPA1 Antibody [NB110-40763] - Staining TRPA1 in mouse intestine.



Immunocytochemistry/Immunofluorescence: TRPA1 Antibody [NB110-40763] - Ai2 elicits TRPA1-dependent Ca^{2+} influx in astrocytes. Immunostaining of primary astrocytes from WT mice with anti-IgG and anti-TRPA1 antibody, then FITC-conjugated secondary antibody. Image collected and cropped by Citeab from the following publication (Role of transient receptor potential ankyrin 1 channels in Alzheimer's disease. J Neuroinflammation (2016)) licensed under a CC-BY license.

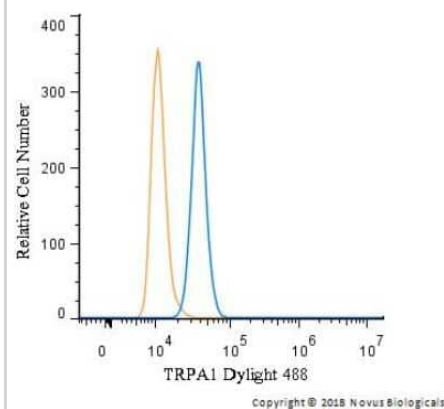


Flow Cytometry: TRPA1 Antibody [NB110-40763] - An intracellular stain was performed on A549 cells with NB110-40763C (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 2.5 μ g/mL for 30 minutes at room temperature. Both antibodies were conjugated to DyLight 650.

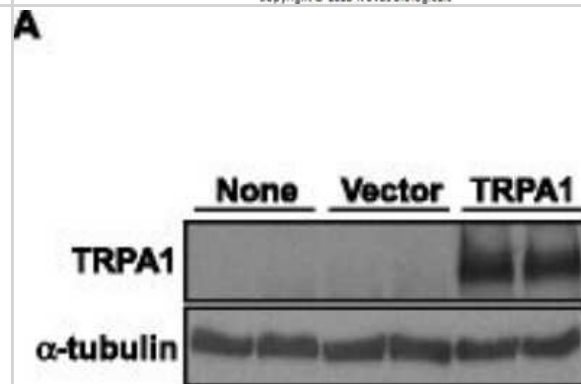


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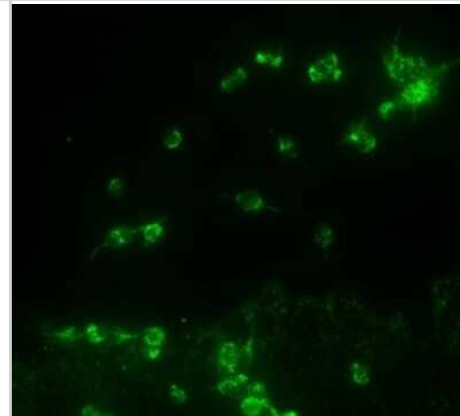
Flow Cytometry: TRPA1 Antibody [NB110-40763] - An intracellular stain was performed on A549 cells with NB110-40763G (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 5 ug/mL for 30 minutes at room temperature. Both antibodies were conjugated to DyLight 488



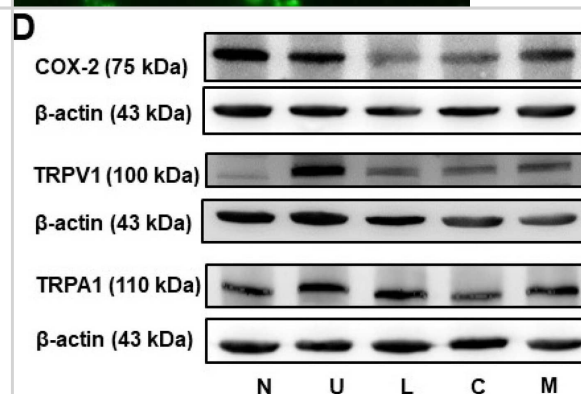
Western Blot: TRPA1 Antibody [NB110-40763] - The essential role of TRPA1 in Ai2-induced calcium influx in HEK293 cells. (a) Western blot analysis of TRPA1 and α -tubulin protein levels in non-treated, vector-or TRPA1-transfected HEK293 cells. Image collected and cropped by Citeab from the following publication (Role of transient receptor potential ankyrin 1 channels in Alzheimer's disease. *J Neuroinflammation* (2016)) licensed under a CC-BY license.



Immunocytochemistry/Immunofluorescence: TRPA1 Antibody [NB110-40763] - Analysis of TRPA1 in HEK 293 cells (Flp In Trex system) cells.

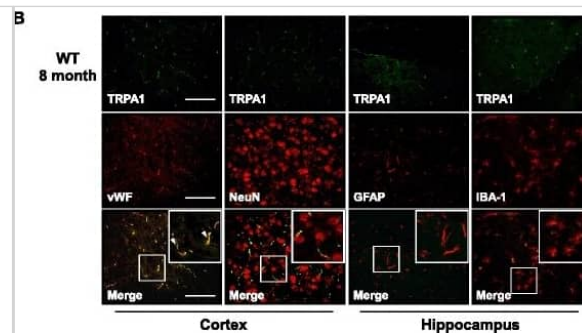


Western Blot: TRPA1 Antibody - BSA Free [NB110-40763] - Effects of Lycium barbarum polysaccharides (LBP) & capsaicin (CAP) on colonic (A) Cyclooxygenase-2 (COX-2), (B) Transient receptor potential cation channel V1 (TRPV1), & (C) Transient receptor potential ankyrin 1 (TRPA1) protein expression. (D) Representatives of Western blot for COX-2, TRPV1, TRPA1, & β -actin. N: control group, U: ulcerative colitis induced group, L: LBP treated group, C: CAP treated group, M: mixed LBP & CAP treated group. Data are presented as mean \pm SEM & analyzed by one-way ANOVA & Fisher's least significant difference test ($n = 8$). # $p < 0.05$ compared to the N group. * $p < 0.05$ compared to the U group. Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/35269566>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

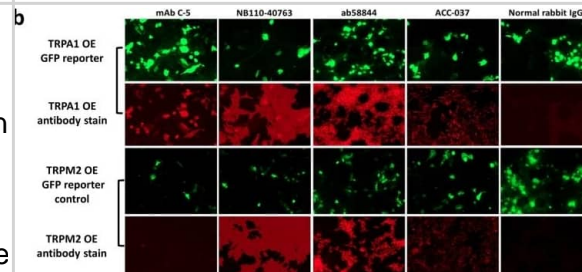


Immunocytochemistry/ Immunofluorescence: TRPA1 Antibody - BSA Free [NB110-40763] - Expression & localization of TRPA1 channels in wild-type (WT) & APP/PS1 Tg mice. (a) Brains were harvested from WT & APP/PS1 Tg mice at 8 months old. Western blot analysis of protein levels of TRPA1 & α -tubulin. Data are mean \pm SEM from 6 mice in each group. *, $P < 0.05$ vs. WT mice. (b, c) Immunohistochemistry of specimens of cortex & hippocampus from 8-month-old WT & APP/PS1 Tg mice with the antibodies anti-TRPA1, anti-vWF (endothelial cell marker), anti-NeuN (neuron marker), anti-GFAP (astrocyte marker) & anti-IBA-1 (microglia marker), then FITC- or Texas red-conjugated secondary antibody. Bar = 50 μ m. vWF-positive cells denoted endothelial cells, NeuN-positive cells denoted neurons, & GFAP-positive cells denoted astrocytes, as indicated by arrowheads, stars or arrows, respectively Image collected & cropped by CiteAb from the following publication

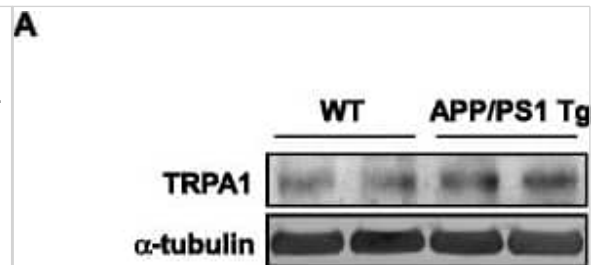
(<http://jneuroinflammation.biomedcentral.com/articles/10.1186/s12974-016-0557-z>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Immunocytochemistry/ Immunofluorescence: TRPA1 Antibody - BSA Free [NB110-40763] - Evaluation of anti-TRPA1 antibody specificity by western blotting & immunofluorescence. (a) Lysates derived from HEK293T cells transiently transfected with the TRPA1 & GFP expression construct (TRPA1 OE) or TRPM2 & GFP negative control (TRPM2 OE) were probed with the antibodies indicated. Additional untransfected & GFP only controls are presented in the first blot (6G8). Uncropped full length blots are displayed, gaps between the blots are present to indicate the use of a different antibody. Mouse mAbs C-5 & 6G8, & NB110-40763 can detect TRPA1 only in the membrane fraction of lysates at the expected molecular weight (127.5 kDa). Several TRPA1-specific bands are observed above this weight. NB110-40763 also detects several other antigens. Ab58844 & ACC- 037 only appear to detect antigens other than TRPA1 in the conditions used. (b) The performance of the same antibodies was evaluated by immunofluorescence (red) in comparison to the expression of the GFP reporter (green), or control TRPM2 & GFP overexpressing cells as for western blotting. Mouse mAb C-5 again shows high specificity with a strong correlation between the expression of the GFP reporter & antibody staining, & no staining in TRPM2 & GFP overexpressing controls. NB110-40763 also demonstrates some sensitivity but has high background that likely does not correspond to Fc binding of the antibody, as the other two rabbit polyclonal antibodies or isotype control did show different staining patterns. Ab58844 & ACC- 037 only appear to detect antigens other than TRPA1 in the conditions used. Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/31811235>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Western Blot: TRPA1 Antibody - BSA Free [NB110-40763] - Expression & localization of TRPA1 channels in wild-type (WT) & APP/PS1 Tg mice. (a) Brains were harvested from WT & APP/PS1 Tg mice at 8 months old. Western blot analysis of protein levels of TRPA1 & α -tubulin. Data are mean \pm SEM from 6 mice in each group. *, $P < 0.05$ vs. WT mice. (b, c) Immunohistochemistry of specimens of cortex & hippocampus from 8-month-old WT & APP/PS1 Tg mice with the antibodies anti-TRPA1, anti-vWF (endothelial cell marker), anti-NeuN (neuron marker), anti-GFAP (astrocyte marker) & anti-IBA-1 (microglia marker), then FITC- or Texas red-conjugated secondary antibody. Bar = 50 μ m. vWF-positive cells denoted endothelial cells, NeuN-positive cells denoted neurons, & GFAP-positive cells denoted astrocytes, as indicated by arrowheads, stars or arrows, respectively Image collected & cropped by CiteAb from the following publication (<http://jneuroinflammation.biomedcentral.com/articles/10.1186/s12974-016-0557-z>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Ye L, Huang X, Liu H et al. The cation channel Trpa1 and chemokine Cxcl1 mediate axonal degeneration in spared nerve injury-induced neuropathic pain *The Journal of Biological Chemistry* 2025-10-01 [PMID: 40889678]

Chen LH, Yeh YM, Chen YF et al. Targeting interleukin-20 alleviates paclitaxel-induced peripheral neuropathy *Pain* 2020-06-01 [PMID: 32068666] (Western Blot, Immunohistochemistry-Frozen, Immunocytochemistry/ Immunofluorescence, Guinea Pig)

Luostarinen S, Hämäläinen M, Moilanen E. Transient Receptor Potential Ankyrin 1 (TRPA1)-An Inflammation-Induced Factor in Human HaCaT Keratinocytes *International Journal of Molecular Sciences* 2021-03-24 [PMID: 33805042] (Western Blot, Immunohistochemistry-Frozen, Immunocytochemistry/ Immunofluorescence, Guinea Pig)

Sánchez JC, Muñoz LV, Galindo-Morquez ML et al. Paclitaxel Regulates TRPA1 Function and Expression Through PKA and PKC *Neurochemical Research* 2023-01-01 [PMID: 36098890] (Western Blot, Immunohistochemistry-Frozen, Immunocytochemistry/ Immunofluorescence, Guinea Pig)

Prandini P, De Logu F, Fusi C et al. Transient Receptor Potential Ankyrin 1 Channels Modulate Inflammatory Response in Respiratory Cells from Patients with Cystic Fibrosis *American Journal of Respiratory Cell and Molecular Biology* 2016-11-01 [PMID: 27281024] (Western Blot, Immunohistochemistry-Frozen, Immunocytochemistry/ Immunofluorescence, Guinea Pig)

Guan M, Ying S, Wang Y. Increased expression of transient receptor potential channels and neurogenic factors associates with cough severity in a guinea pig model *BMC Pulmonary Medicine* 2021-12-01 [PMID: 34078339] (Western Blot, Immunohistochemistry-Frozen, Immunocytochemistry/ Immunofluorescence, Guinea Pig)

Yoshida M, Yamamiya R, Shimizu Y, Yoshimura K. Transgenic Chlamydomonas Expressing Human Transient Receptor Potential Ankyrin 1 (TRPA1) Channels to Assess the Effect of Agonists and Antagonists *Frontiers in Pharmacology* 2020-09-29 [PMID: 33117171] (Western Blot, Immunohistochemistry-Frozen, Immunocytochemistry/ Immunofluorescence, Guinea Pig)

Ma S, Wang DH. Knockout of Trpa1 accelerates age-related cardiac fibrosis and dysfunction *PLOS ONE* 2022-09-14 [PMID: 36103570] (Western Blot, Immunohistochemistry-Frozen, Immunocytochemistry/ Immunofluorescence, Guinea Pig)

Martin C, Stoffer C, Mohammadi M, Hugo J et al. Na(V)1.9 Potentiates Oxidized Phospholipid-Induced TRP Responses Only under Inflammatory Conditions *Front Mol Neurosci* 2018-02-08 [PMID: 29410612]

Kim YJ, Choi SJ, Hong SI et al. The ion channel TRPA1 is a modulator of the cocaine reward circuit in the nucleus accumbens *Mol Psychiatry* 2024-05-31 [PMID: 38822069]

Koyanagi M, Ogido R, Moriya A et al. Development of a 3-dimensional organotypic model with characteristics of peripheral sensory nerves *Cell Rep Methods* 2024-08-07 [PMID: 39116883]

Hudhud L, Rozmer K, Kecskés A et al. Transient Receptor Potential Ankyrin 1 Ion Channel Is Expressed in Osteosarcoma and Its Activation Reduces Viability *Int J Mol Sci* 2024-03-28 [PMID: 38612571]

More publications at <http://www.novusbio.com/NB110-40763>

Procedures

Western Blot protocol for TRPA1 Antibody (NB110-40763)

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.

Immunocytochemistry/ Immunofluorescence Protocol for TRPA1 Antibody (NB110-40763)

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. Permeabilize the cells with 0.1% Triton X100 or other suitable detergent for 10 min.
4. Remove the permeabilization 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.



Immunohistochemistry-Paraffin Protocol for TRPA1 Antibody (NB110-40763)

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 (keep slides in the sodium citrate buffer at all times).

Staining:

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



Flow (Intracellular) Protocol for TRPA1 Antibody (NB110-40763)

Protocol for Flow Cytometry Intracellular Staining

Sample Preparation.

1. Grow cells to 60-85% confluency. Flow cytometry requires between 2×10^5 and 1×10^6 cells for optimal performance.
2. If cells are adherent, harvest gently by washing once with staining buffer and then scraping. Avoid using trypsin as this can disrupt certain epitopes of interest. If enzymatic harvest is required, use Accutase, Collagenase, or TrypLE Express for a less damaging option.
3. Reserve 100 μ L for counting, then transfer cell volume into a 50 mL conical tube and centrifuge for 8 minutes at 400 RCF.
 - a. Count cells using a hemocytometer and a 1:1 trypan blue exclusion stain to determine cell viability before starting the flow protocol. If cells appear blue, do not proceed.
4. Re-suspend cells to a concentration of 1×10^6 cells/mL in staining buffer (NBP2-26247).
5. Aliquot out 100 μ L samples in accordance with your experimental samples.

Tip: When cell surface and intracellular staining are required in the same sample, it is advisable that the cell surface staining be performed first since the fixation and permeabilization steps might reduce the availability of surface antigens.

Intracellular Staining.

Tip: When performing intracellular staining, it is important to use appropriate fixation and permeabilization reagents based upon the target and its subcellular location. Generally, our Intracellular Flow Assay Kit (NBP2-29450) is a good place to start as it contains an optimized combination of reagents for intracellular staining as well as an inhibitor of intracellular protein transport (necessary if staining secreted proteins). Certain targets may require more gentle or transient permeabilization protocols such as the commonly employed methanol or saponin-based methods.

Protocol for Cytoplasmic Targets:

1. Fix the cells by adding 100 μ L fixation solution (such as 4% PFA) to each sample for 10-15 minutes.
2. Permeabilize cells by adding 100 μ L of a permeabilization buffer to every 1×10^6 cells present in the sample. Mix well and incubate at room temperature for 15 minutes.
 - a. For cytoplasmic targets, use a gentle permeabilization solution such as 1X PBS + 0.5% Saponin or 1X PBS + 0.5% Tween-20.
 - b. To maintain the permeabilized state throughout your experiment, use staining buffer + 0.1% of the permeabilization reagent (i.e. 0.1% Tween-20 or 0.1% Saponin).
3. Following the 15 minute incubation, add 2 mL of the staining buffer + 0.1% permeabilizer to each sample.
4. Centrifuge for 1 minute at 400 RCF.
5. Discard supernatant and re-suspend in 100 μ L of staining buffer + 0.1% permeabilizer.
6. Add appropriate amount of each antibody (eg. 1 test or 1 μ g per sample, as experimentally determined).
7. Mix well and incubate at room temperature for 30 minutes- 1 hour. Gently mix samples every 10-15 minutes.
8. Following the primary/conjugate incubation, add 1-2 mL/sample of staining buffer +0.1% permeabilizer and centrifuge for 1 minute at 400 RCF.
9. Wash twice by re-suspending cells in staining buffer (2 mL for tubes or 200 μ L for wells) and centrifuging at 400 RCF for 5 minutes. Discard supernatant.
10. Add appropriate amount of secondary antibody (as experimentally determined) to each sample.
11. Incubate at room temperature in dark for 20 minutes.
12. Add 1-2 mL of staining buffer and centrifuge at 400 RCF for 1 minute and discard supernatant.
13. Wash twice by re-suspending cells in staining buffer (2 mL for tubes or 200 μ L for wells) and centrifuging at 400 RCF for 5 minutes. Discard supernatant.
14. Resuspend in an appropriate volume of staining buffer (usually 500 μ L per sample) and proceed with analysis on your flow cytometer.



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General: novus@novusbio.com

Products Related to NB110-40763

NBP2-33376H	Blue Marker Antibody (6F4-F6) [HRP]
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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