Product Datasheet

Myelin Protein Zero Antibody - BSA Free
NB100-1607

Unit Size: 0.25 ml

Store at 4C in the dark.

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Publications: 20

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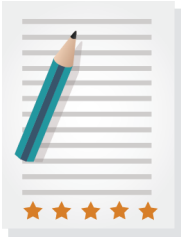
Updated 9/9/2025 v.20.1



NB100-1607

Myelin Protein Zero Antibody - BSA Free

Product Information

Unit Size	0.25 ml
Concentration	0.2 mg/ml
Storage	Store at 4C in the dark.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgY
Purity	Immunogen affinity purified
Buffer	10mM PBS (0.9% isotonic, w/v, pH 7.2)
Target Molecular Weight	27 kDa

Product Description

Description	Novus Biologicals Chicken Myelin Protein Zero Antibody - BSA Free (NB100-1607) is a polyclonal antibody validated for use in IHC, WB, ICC/IF and IP. Anti-Myelin Protein Zero Antibody: Cited in 18 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Chicken
Gene ID	4359
Gene Symbol	MPZ
Species	Human, Mouse, Rat
Reactivity Notes	Human, Mouse reactivity reported in scientific literature (PMID: 26406915), Rat reactivity reported in scientific literature (PMID: 22511272).
Marker	Schwann Cell Marker
Immunogen	Chickens were immunized with two synthetic peptide/keyhole limpet hemocyanin (KLH) conjugates. These synthetic peptides corresponded to different regions of Myelin Protein Zero, but are shared between the human (NP_000521, NCBI) and mouse (NP_032649, NCBI) sequences.
Notes	Chicken products cannot be exported to Canada. Purification Notes After repeated injections, immune eggs were collected, and the IgY fractions were purified from the yolks. These IgY fractions were then affinity-purified using a peptide column, and the concentrations of the eluates adjusted to 200 ug/ml. Finally, equal volumes of both of these affinitypurified anti-peptide antibodies were mixed, and the preparation was filter-sterilized. Storage Notes Store at 4C in the dark. Under these conditions, the antibodies should have a shelf life of at least 12 months (provided they remain sterile). Do not freeze these antibodies unless you want to store them for longer periods of time. Note, however, that each time an antibody preparation is frozen, about half of its binding activity is lost.

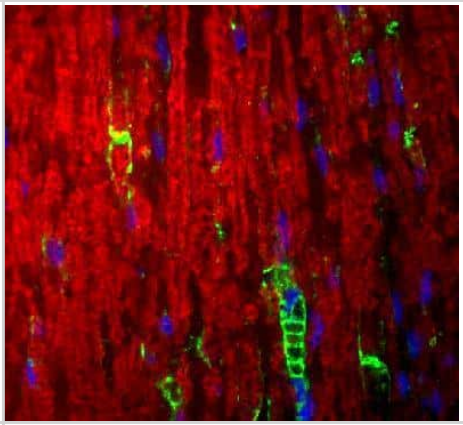
Product Application Details

Applications	Western Blot, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunoprecipitation
Recommended Dilutions	Western Blot 1:10000-1:20000, Immunohistochemistry 1:2000-1:5000, Immunocytochemistry/ Immunofluorescence 1:2000-1:5000, Immunoprecipitation

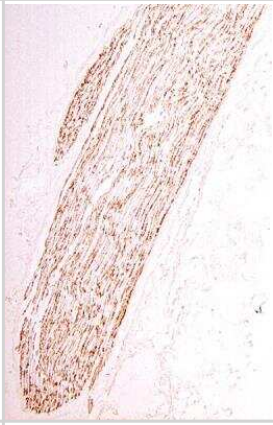
Application Notes	Western Blot reactivity reported in scientific literature (PMID: 22689911). Use in immunoprecipitation reported in scientific literature (PMID:26406915).

Images

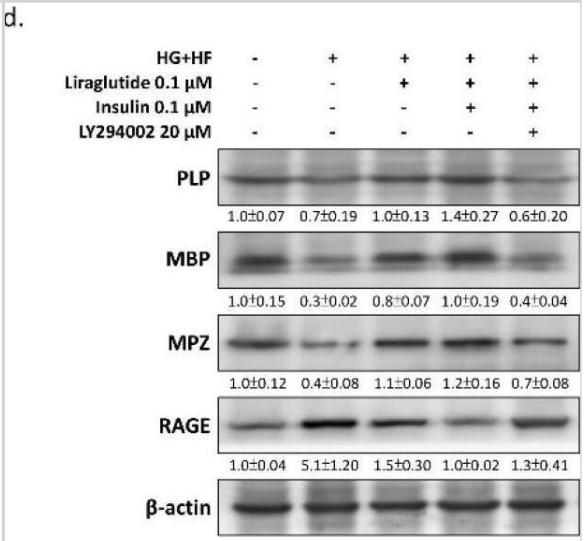
Immunocytochemistry/Immunofluorescence: Myelin Protein Zero Antibody [NB100-1607] - Immunohistochemical staining of P-zero on a 4.0% paraformaldehyde-fixed, paraffin-embedded tissue section through the sciatic nerve of an adult mouse. (Green) P0 concentration was 1:1000 dilution, followed by fluorescein-labeled goat anti-chicken IgY (1:500 dilution). Red is actin. Blue is DAPI nuclear counterstain.



Immunohistochemistry: Myelin Protein Zero Antibody [NB100-1607] - In the image (a lower power tissue section through an adult sciatic nerve), Myelin Protein Zero (brown staining) can be seen in all of the myelinating Schwann cells.



Liraglutide enhances the normal physiological function of SCs via insulin-Akt signaling. (a) Western blot analysis of Ser473-phosphorylated Akt confirmed that Liraglutide and insulin reverse the glucolipotoxicity-induced insulin signaling blockade. (b) MTT assays showed that the protective effect of Liraglutide and insulin were inhibited by co-treatment with 20 μM LY294002. (c) mRNA levels of neurotrophic factors, including CNTF, NGF, NT-3, and BDNF, were measured by qPCR. Liraglutide and insulin significantly elevated the mRNA levels of neurotrophic factors suppressed by glucolipotoxicity. However, LY294002 counteracted the effects of Liraglutide and insulin. (d) Western blots demonstrated that Liraglutide and insulin show efficacy in improving SC synthesis of essential myelin components and decrease the expression of the demyelination marker RAGE. Similarly, LY294002 blocked the effects of Liraglutide and insulin in promoting myelination in RSC96 SCs. All values are presented as the mean +/- SEM. Significant difference was determined using multiple comparisons of Dunnett's posthoc test for * $p < 0.05$ and ** $p < 0.01$. N.S., not significant. Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/36291547), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Mikulka CR, Dearborn JT, Benitez BA et al. Cell-autonomous expression of the acid hydrolase galactocerebrosidase Proceedings of the National Academy of Sciences 2020-04-21 [PMID: 32253319]

Kornelius E, Tsou SH, Chang CC et al. Liraglutide Attenuates Glucolipotoxicity-Induced RSC96 Schwann Cells' Inflammation and Dysfunction Biomolecules 2022-09-21 [PMID: 36291547]

Shen X, Qu F, Pei Y et al. Repairing sciatic nerve injury with self-assembling peptide nanofiber scaffold-containing chitosan conduit Frontiers in Neurology 2022-10-13 [PMID: 36313506]

Pothion H, Lihrmann I, Duclos C, Riou G et Al. The SELENOT mimetic PSELT promotes nerve regeneration by increasing axonal myelination in a facial nerve injury model in female rats J Neurosci Res 2022-06-22 [PMID: 35730417]

Koike T, Tanaka S, Hirahara Y, Oe S et Al. Morphological characteristics of p75 neurotrophin receptor-positive cells define a new type of glial cell in the rat dorsal root ganglia J Comp Neurol 2019-02-20 [PMID: 30779139]

Koike T, Ebara S, Tanaka S, Kase M et Al. Distribution, fine structure, and three-dimensional innervation of lamellar corpuscles in rat plantar skin Cell Tissue Res 2021-09-25 [PMID: 34562148]

Woods C, Kapur RP, Bischoff A, Lovell M et Al. Neurons populating the rectal extrinsic nerves in humans express neuronal and Schwann cell markers Neurogastroenterol Motil 2020-12-31 [PMID: 33382200]

Erratum to "Cytokine storm associated with severe COVID-19 infections: The potential mitigating role of omega-3 fatty acid triglycerides in the ICU". FASEB journal : official publication of the Federation of American Societies for Experimental Biology 2023-08-01 [PMID: 37490044]

Su W, He X, Lin Z et al. Activation of P2X7R inhibits proliferation and promotes the migration and differentiation of Schwann cells Research Square 2023-10-26 (Immunocytochemistry/ Immunofluorescence, Mouse)

Tseng KY, Wang HC, Cheng KF et al. Sciatic Nerve Intrafascicular Injection Induces Neuropathy by Activating the Matrix Modulators MMP-9 and TIMP-1 Frontiers in pharmacology 2022-05-20 [PMID: 35694244] (IHC-Fr, Rat)

Xu J, Zhang B, Cai J et al. The transcription factor Stat-1 is essential for Schwann cell differentiation, myelination and myelin sheath regeneration Molecular medicine (Cambridge, Mass.) 2023-06-26 [PMID: 37365519] (ICC/IF, IHC-P, WB, Rat)

Details:
1:500 dilution

Malheiro A Investigating the effect of phosphodiesterase-4 (PDE4) inhibitors on Schwann cells myelination in a 3D regeneration model and in a hyperglycemia model Book 2021-06-02

More publications at http://www.novusbio.com/NB100-1607

Procedures

Immunohistochemistry Chicken IgY Protocol (NB100-1607)
Immunohistochemistry Chicken IgY Protocol (NB100-1607):
Citrate Buffer Antigen Retrieval Protocol

Background: Formaldehyde fixation (2% or 4%, or as a component of 10% formalin) produces protein cross-links in tissues that tends to interfere with antibody penetration. This seems to be particularly true of paraffin- embedded formaldehyde-fixed tissue. Since chicken IgY antibodies are larger than rabbit or mouse IgG's, "extra steps" may be necessary to compensate for their larger size.

The citrate-based "antigen retrieval" protocol outlined below has been shown to improve chicken IgY antibody penetration into 4% formalde- hyde-fixed paraffin-embedded sections, and can increase the degree and intensity of immunoreactivity and immunostaining.

Reagents (NOTE: You can use either the Sodium Citrate or Citric Acid Buffers in step #3, below)

"Sodium Citrate Buffer" (10mM Sodium Citrate, 0.05% Tween 20, pH 6.0)

Weigh out 2.94 grams of trisodium citrate (dihydrate). Dissolve in approximately 900 mls of deionized, distilled water. Adjust the pH to 6.00 with 1.0 N HCl. Add 0.5 ml of Tween-20. Mix. Bring up the volume to 1.0 litres with water. Store this solution at room temperature for 3 months or at 4C for longer periods.

"Citric Acid Buffer" (10mM Citric Acid, 0.05% Tween 20, pH 6.0)

Weigh out 1.92 grams of citric acid (anhydrous). Dissolve in approximately 900 mls of deionized, distilled water. Adjust the pH to 6.0 with 1.0 N NaOH. Add 0.5 ml of Tween-20. Mix. Bring up the volume to 1.0 litres with water. Store this solution at room temperature for 3 months or at 4C for longer periods.

"Phosphate-Buffered Saline" [PBS, 10 mM Sodium phosphate-buffered (pH 7.2) isotonic (0.9%, w/v) saline solution] PBS Tween (0.05% Tween 20 in PBS)
Ethanol (80%, 90%, 95%, 100%) diluted with water

Xylene

Procedure (for use with paraffin-embedded sections):

1 Deparaffinize tissue sections in 2 changes of xylene (5 minutes each).

2. Hydrate in 2 changes of 100% ethanol (3 minutes each), 95% ethanol (1 minute), 90% ethanol (1 minute), 80% ethanol (1 minute). Rinse in distilled water.

3. Pre-heat steamer or water bath with staining dish containing either Sodium Citrate Buffer or Citrate Buffer. Wait until temperature reaches 95-100 degrees C.

NOTE: Microwave or pressure cooker can be used as an alternative as a heating source.

4. Immerse slides in the staining dish. Place the lid loosely on the staining dish and incubate for 20-40 minutes (optimal incubation times will vary).

5. Remove the staining dish, and allow it to cool to room temperature (for 20 minutes or so).

6. Rinse sections in PBS Tween twice for 2 minutes each time.

NOTE: The remainder of this protocol is meant to be a suggestion, and can be substituted with your regular immunostaining protocol.

7. Block sections for 30 minutes with Blocking buffer diluted 1:10 with water.

8. Incubate sections with primary antibody at appropriate dilution in antibody dilution buffer overnight at 4 degrees C. Since chicken IgY antibodies are larger than mammalian IgG's, this overnight incubation allows more time for antibody penetration into tissue sections.

9. Rinse sections with PBS Tween 20 twice for 5 minutes each time.

10. Incubate sections with labeled secondary antibody (see NOTE, below) at appropriate dilution (for one hour at room temperature) in a 1:100 dilution of blocking buffer (diluted in PBS).

11. Rinse with PBS Tween 20 for three times for 5 minutes each time.

NOTE: This protocol may use HRP- or fluorescently-labeled secondary antibodies produced in goats or rabbits.

References:

1. Shi SR, Chaiwun B, Young L, Cote RJ, Taylor CR. (1993). Antigen retrieval technique utilizing citrate buffer or urea solution for immunohistochemical demonstration of androgen receptor in formalin-fixed paraffin sections. J Histochem Cytochem 41 (11): 1599-1604.

2. Kanai K, Nunoya T, Shibuya K, Nakamura T, Tajima M (1998). Variations in effectiveness of antigen retrieval pretreatments for diagnostic immunohistochemistry. Res Vet Sci 64 (1): 57-61.

3. Brown RW, Chirala R. (1995). Utility of microwave-citrate antigen retrieval in diagnostic immunohistochemistry. Mod Pathol 8 (5): 515-20.

4. Morgan JM, Navabi H, Schmid KW, Jasani B (1994). Possible role of tissue-bound calcium ions in citrate-mediated high-temperature antigen retrieval. J Pathol 174 (4): 301-7.

5. Pellicer EM, Sundblad A (1994). Antigen retrieval by microwave oven with buffer of citric acid. Medicina (B Aires). 54 (2): 129-32.

6. Shi SR, Chaiwun B, Young L, Cote RJ, Taylor CR (1993). Antigen retrieval technique utilizing citrate buffer or urea solution for immunohistochemical demonstration of androgen receptor in formalin-fixed paraffin sections. J Histochem Cytochem 41 (11): 1599-604.

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Products Related to NB100-1607

NBP2-33376H	Blue Marker Antibody (6F4-F6) [HRP]
BAF010	Goat anti-Chicken IgY Secondary Antibody [Biotin]
NB7276	Goat anti-Chicken IgM Heavy Chain Secondary Antibody
H00004359-P01-10ug	Recombinant Human Myelin Protein Zero GST (N-Term) Protein

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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