Product Datasheet

TDP-43/TARDBP Antibody - BSA Free
NB110-55376

Unit Size: 0.1 ml

Store at 4C. Do not freeze.

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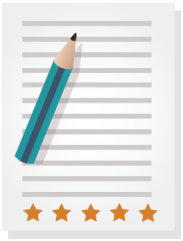
Updated 10/23/2024 v.20.1



NB110-55376

TDP-43/TARDBP Antibody - BSA Free

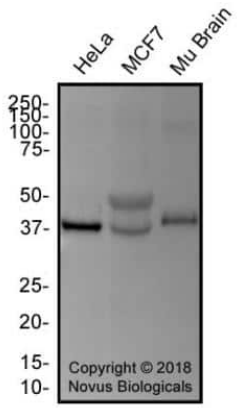
Product Information	
Unit Size	0.1 ml
Concentration	1 mg/ml
Storage	Store at 4C. Do not freeze.
Clonality	Polyclonal
Preservative	0.05% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS
Target Molecular Weight	45 kDa

Product Description	
Host	Rabbit
Gene ID	23435
Gene Symbol	TARDBP
Species	Human, Mouse, Chicken, Primate, Xenopus, Zebrafish
Immunogen	A synthetic peptide to a C-terminal region [within residues 350-414] of the human TARDBP protein. [Swiss-Prot: Q13148]

Product Application Details	
Applications	Western Blot, ELISA, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Paraffin
Recommended Dilutions	Western Blot 0.5-2 ug/ml, ELISA reported in scientific literature (PMID 25853864), Immunohistochemistry 1:250, Immunocytochemistry/ Immunofluorescence 1:100-1:1000, Immunohistochemistry-Paraffin 1:250
Application Notes	In Western blot a band is seen at ~45 kDa, representing the human TARDBP protein. In ICC/IF a nuclear signal is present in MCF-7 cells.

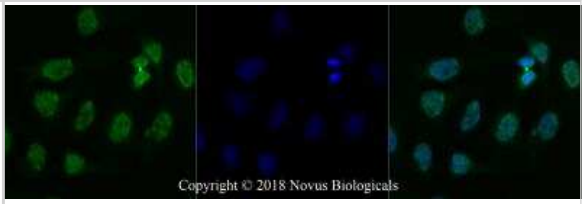
Images

Western Blot: TDP-43/TARDBP Antibody [NB110-55376] - Total protein from HeLa, MCF7 and mouse brain was separated on a 12% gel by SDS-PAGE, transferred to PVDF membrane and blocked in 5% non-fat milk in TBST. The membrane was probed with 1.0 ug/ml anti-TARDBP in 1% block buffer and detected with an anti-rabbit HRP secondary antibody using chemiluminescence.

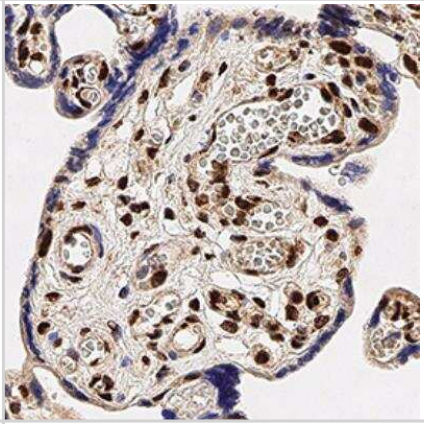


Immunocytochemistry/Immunofluorescence: TDP-43/TARDBP Antibody [NB110-55376] - HeLa cells were fixed in 4% paraformaldehyde for 10 minutes and permeabilized in 0.5% Triton X-100 in PBS for 5 minutes. The cells were incubated with TDP-43/TARDBP Antibody conjugated to Alexa Fluor 488 (NB110-55376AF488) at 10 ug/ml for 1 hour at room temperature. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 100X objective and digitally deconvolved.

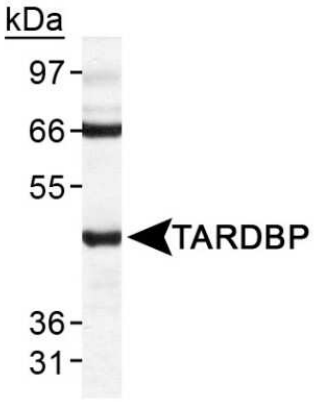
Immunocytochemistry/Immunofluorescence: TDP-43/TARDBP Antibody [NB110-55376] - HeLa cells were fixed for 10 minutes using 10% formalin and then permeabilized for 5 minutes using 1X PBS + 0.5% Triton X-100. The cells were incubated with anti-TARDBP at 2 ug/ml overnight at 4C and detected with an anti-rabbit DyLight 488 (Green) at a 1:500 dilution. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.



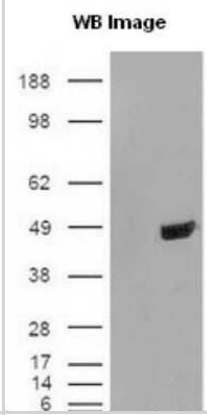
Immunohistochemistry-Paraffin: TDP-43/TARDBP Antibody [NB110-55376] - Analysis of FFPE human placenta using TDP-43 antibody at 1:250 on a Bond Rx autostainer (Leica Biosystems). The assay involved 20 minutes of heat induced antigen retrieval (HIER) using 10mM sodium citrate buffer (pH 6.0) and endogenous peroxidase quenching with peroxide block. The sections were incubated with primary antibody for 30 minutes and Bond Polymer Refine Detection (Leica Biosystems) with DAB was used for signal development followed by counterstaining with hematoxylin. Whole slide scanning and capturing of representative images was performed using Aperio AT2 (Leica Biosystems). Nuclear staining was observed. Staining was performed by Histowiz.



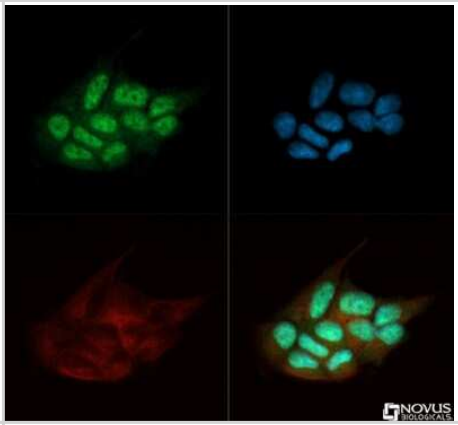
Western Blot: TDP-43/TARDBP Antibody [NB110-55376] - TARDBP antibody was tested in HeLa WCE.



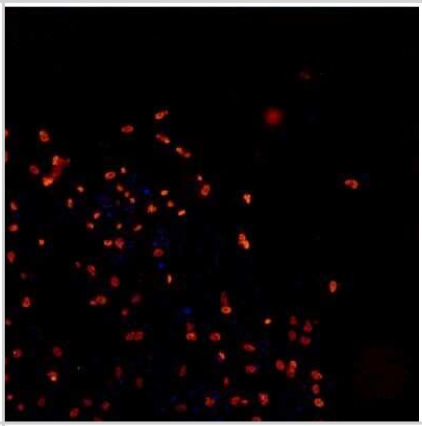
Western Blot: TDP-43/TARDBP Antibody [NB110-55376] - Cells were transfected with the pCMV6-ENTRY control or pCMV6-ENTRY TARDBP cDNA for 48 hrs and lysed. Equivalent amounts of cell lysates (5 ug per lane) were separated by SDS-PAGE and immunoblotted with anti-TARDBP.



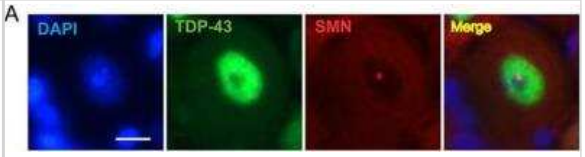
Immunocytochemistry/Immunofluorescence: TDP-43/TARDBP Antibody [NB110-55376] - TARDBP antibody was tested in MCF-7 cells with DyLight 488 (Green). Nuclei and alpha-tubulin were counterstained with DAPI (Blue) and DyLight 550 (Red).



Immunocytochemistry/Immunofluorescence: TDP-43/TARDBP Antibody [NB110-55376] - Analysis using the DyLight 550 conjugate of NB110-55376. Staining of Human iPS derived neurons, fixed in 4% formaldehyde solution. NB110-55376R was diluted 1:200. All antibodies were diluted in PBS/BSA 3% (w/v)) Triton X-100 0,3 % (v/v). Images taken by an Arrayscan (Cellomics). Blue dots in TDP staining is Hoechst.



Immunocytochemistry/Immunofluorescence: TDP-43/TARDBP Antibody [NB110-55376] - Subcellular distribution of TDP-43 and CWC22 in control DRG sensory neurons. TDP-43 was stained diffusely in the nucleus, excluding SMN foci in sensory neurons. Scale bar: 10 um. Image collected and cropped by CiteAb from the following publication (https://dmm.biologists.org/lookup/doi/10.1242/dmm.028225) licensed under a CC-BY license.



CWC22 is colocalized with nuclear speckles & upregulated in diabetic DRG sensory neurons. (A) Subcellular distribution of TDP-43 & CWC22 in control DRG sensory neurons. TDP-43 was stained diffusely in the nucleus, excluding SMN foci in sensory neurons. CWC22 consistently colocalized with a marker protein SC35 of nuclear speckles in sensory neurons. No obvious differences in the subcellular localization of CWC22 were identified in diabetic neurons (not shown) compared with controls. Scale bar: 10 µm. (B) qRT-PCR analysis of Cwc22 mRNA expression in diabetic & control mice. Cwc22 expression was upregulated □2.5-fold in diabetic DRGs. *P<0.05, unpaired two-tailed Student's t-test. Data represented as mean±s.e.m. See Cheng et al. (2015) for microarray data indicating rises in Cwc22 expression as reported separately. Image collected & cropped by CiteAb from the following publication (https://journals.biologists.com/dmm/article/10/3/215/2257/Diabetic-polyneuropathy-sensory-neurons-nuclear), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

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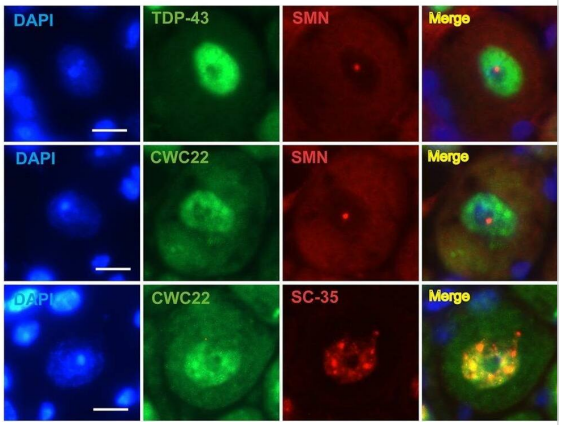

Publications

Kobayashi M, Chandrasekhar A, Cheng C et al. Diabetic polyneuropathy, sensory neurons, nuclear structure and spliceosome alterations: a role for CWC22. Dis Model Mech. 2017-03-01 [PMID: 28250049]

Tejwani L, Jung Y, Kokubu H et al. Reduction of nemo-like kinase increases lysosome biogenesis and ameliorates TDP-43-related neurodegeneration Journal of Clinical Investigation 2023-08-15 [PMID: 37384409]

Yasuhara T, Xing Y, Bauer N et al. Condensates induced by transcription inhibition localize active chromatin to nucleoli Molecular Cell 2022-06-01 [PMID: 35662392]

Tejwani L, Kokubu H, Lee PJ et al. Reduction of Nemo-like kinase increases lysosome biogenesis and ameliorates TDP-43-related neurodegeneration bioRxiv 2020-01-01 (WB)

Goossens J, Vanmechelen E, Trojanowski JQ et al. TDP-43 as a possible biomarker for frontotemporal lobar degeneration: a systematic review of existing antibodies Acta Neuropathol Commun 2015-04-09 [PMID: 25853864]

Details:
This publication is a systematic review of existing antibodies for TDP-43/TARDBP.

Li Q, Yokoshi M, Okada H, Kawahara Y. The cleavage pattern of TDP-43 determines its rate of clearance and cytotoxicity Nat Commun. 2015-01-29 [PMID: 25630387]

Fang YS, Tsai KJ, Chang YJ et al. Full-length TDP-43 forms toxic amyloid oligomers that are present in frontotemporal lobar dementia-TDP patients. Nat Commun. 2014-09-13 [PMID: 25215604]

Udan-Johns M, Bengoechea R, Bell S et al. Prion-like nuclear aggregation of TDP-43 during heat shock is regulated by HSP40/70 chaperones. Hum Mol Genet. 2013-09-04 [PMID: 23962724] (WB, Human)

Shiina Y, Arima K, Tabunoki H et al. TDP-43 dimerizes in human cells in culture. Cell Mol Neurobiol 2010-05-01 [PMID: 20043239] (WB, Human)

Schmid B, Hruscha A, Hogl S et al. Loss of ALS-associated TDP-43 in zebrafish causes muscle degeneration, vascular dysfunction, and reduced motor neuron axon outgrowth Proc Natl Acad Sci U S A 2013-03-26 [PMID: 23457265] (WB, Zebrafish)

Geser F et al. Evidence of multisystem disorder in whole-brain map of pathological TDP-43 in amyotrophic lateral sclerosis. Arch Neurol. 65(5):636-41. 2008-05-01 [PMID: 18474740] (IF/IHC, Human)

Wegorzewska I, Bell S, Cairns NJ et al. TDP-43 mutant transgenic mice develop features of ALS and frontotemporal lobar degeneration. Proc Natl Acad Sci U S A;106(44):18809-14. 2009-11-03 [PMID: 19833869] (IF/IHC, Human)

More publications at http://www.novusbio.com/NB110-55376

Procedures

Protocol specific for TARDBP Antibody (NB110-55376)

Western Blot Protocol

1. Perform SDS-PAGE (4-12% Bis-Tris) on samples to be analyzed, loading 20 ug of total protein per lane.
2. Transfer proteins to Nitrocellulose according to the instructions provided by the manufacturer of the transfer apparatus.
3. Rinse membrane with dH2O and then stain the blot using Ponceau S for 1-2 minutes to access the transfer of proteins onto the nitrocellulose membrane. Rinse the blot in water to remove excess stain and mark the lane locations and locations of molecular weight markers using a pencil.
4. Rinse the blot in TBS for approximately 5 minutes.
5. Block the membrane using 5% non-fat dry milk + 1% BSA in TBS, overnight at 4 degrees Celcius.
6. Rinse the membrane in dH2O and then wash the membrane in wash buffer [TBS + 0.1% Tween] 3 times for 10 minutes each.
7. Dilute the rabbit anti-TARDBP primary antibody (NB110-55376) in blocking buffer and incubate 1 hour at room temperature.
8. Rinse the membrane in dH2O and then wash the membrane in wash buffer [TBS + 0.1% Tween] 3 times for 10 minutes each.
9. Apply the diluted rabbit-IgG HRP-conjugated secondary antibody in blocking buffer (as per manufacturers instructions) and incubate 1 hour at room temperature.
10. Wash the blot in wash buffer [TBS + 0.1% Tween] 3 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 manufacturers instructions (Pierce ECL).

Note: Tween-20 can be added to the blocking or antibody dilution buffer at a final concentration of 0.05-0.2%, provided it does not interfere with antibody-antigen binding.

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Products Related to NB110-55376

NB800-PC1	HeLa Whole Cell Lysate
NB110-55376PEP	TDP-43/TARDBP 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

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