TDP43 Recombinant Antibody [PSH09-14] - Rat IgG1 (Chimeric) - BSA and Azide free

HA610425

Product Type:	Recombinant Chimeric Antibody, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, IF-Tissue, IF-Cell
Molecular Wt:	Predicted band size: 45 kDa
Clone number:	PSH09-14

Description: TDP-43 is a transcriptional repressor that binds to chromosomally integrated TAR DNA and represses HIV-1 transcription. In addition, this protein regulates alternate splicing of the CFTR gene. TDP-43 has been shown to bind both DNA and RNA and have multiple functions in transcriptional repression, pre-mRNA splicing and translational regulation. Recent work has characterized the transcriptome-wide binding sites revealing that thousands of RNAs are bound by TDP-43 in neurons. TDP-43 was originally identified as a transcriptional repressor that binds to chromosomally integrated trans-activation response element (TAR) DNA and represses HIV-1 transcription. It was also reported to regulate alternate splicing of the CFTR gene and the apoA-II gene. In spinal motor neurons TDP-43 has also been shown in humans to be a low molecular weight neurofilament (hNFL) mRNA-binding protein. It has also shown to be a neuronal activity response factor in the dendrites of hippocampal neurons suggesting possible roles in regulating mRNA stability, transport and local translation in neurons. It has been demonstrated that zinc ions are able to induce aggregation of endogenous TDP-43 in cells. Moreover, zinc could bind to RNA binding domain of TDP-43 and induce the formation of amyloid-like aggregates in vitro.

Immunogen: Synthetic peptide within human TDP43 aa 365-414.

Positive control: HeLa (Human cervical adenocarcinoma cell) lysate, HEK-293 (Human embryonic kidney cell) lysate, SH-SY5Y (Human neuroblastoma cell) lysate, K-562 (Human chronic myelogenous leukemia cell) lysate, C2C12 (Mouse myoblast) lysate, PC-12 (Rat pheochromocytoma cell (undifferentiated)) lysate, Mouse brain tissue lysate.

Subcellular location: Cytoplasm, Mitochondrion, Nucleus.

Database links: SwissProt: Q13148 Human | Q921F2 Mouse
Entrez Gene: 298648 Rat

Recommended Dilutions:

WB	1:2,000
IHC-P	1:500-1:2,000
IF-Tissue	1:500
IF-Cell	1:50

Storage Buffer: PBS (pH7.4).

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

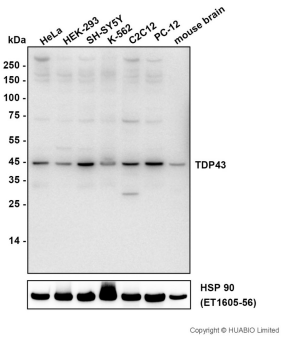

Fig1: Western blot analysis of TDP43 on different lysates with Rabbit anti-TDP43 antibody (HA610425) at 1/2,000 dilution.

Lane 1: HeLa (Human cervical adenocarcinoma cell) lysate
Lane 2: HEK-293 (Human embryonic kidney cell) lysate
Lane 3: SH-SY5Y (Human neuroblastoma cell) lysate
Lane 4: K-562 (Human chronic myelogenous leukemia cell) lysate
Lane 5: C2C12 (Mouse myoblast) lysate
Lane 6: PC-12 (Rat pheochromocytoma cell (undifferentiated)) lysate
Lane 7: Mouse brain tissue lysate

Lysates/proteins at 15 µg/Lane.
Exposure time: 20 seconds; ECL: K1801

Blocking: 5% NFDM/TBST, 1 hour at room temperature
Primary antibody: HA610425, 1/2,000 in primary antibody dilution buffer (K1803), overnight at 4 °C
Secondary antibody: Goat anti-Rat IgG-HRP (HA1023), 1/50,000 in 5% NFDM/TBST, 1 hour at room temperature

Predicted band size: 45 kDa
Observed band size: 45 kDa

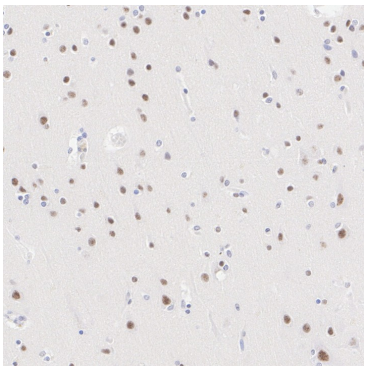

Fig2: Application: Immunohistochemistry (IHC-P)

Species: Human
Tissue: Brain
Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST
Endogenous peroxidase blocking: 3% H_2O_2, 10 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.
Primary antibody: HA610425, 1/500, 1 hour at room temperature.
Secondary antibody: HA1023, 30 minutes at room temperature.

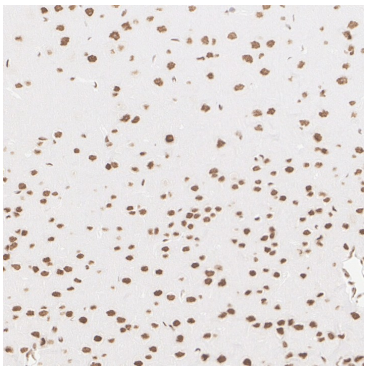

Fig3: Application: Immunohistochemistry (IHC-P)

Species: Mouse
Tissue: Brain
Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST
Endogenous peroxidase blocking: 3% H_2O_2, 10 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.
Primary antibody: HA610425, 1/2,000, 1 hour at room temperature.
Secondary antibody: HA1023, 30 minutes at room temperature.

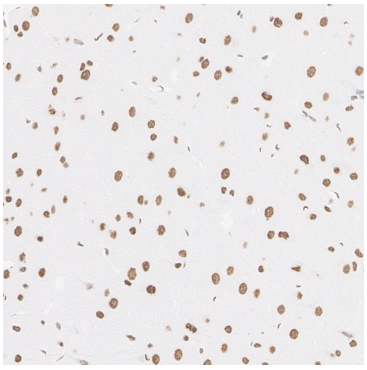

Fig4: Application: Immunohistochemistry (IHC-P)

Species: Rat
Tissue: Brain
Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST
Endogenous peroxidase blocking: 3% H_2O_2, 10 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.
Primary antibody: HA610425, 1/2,000, 1 hour at room temperature.
Secondary antibody: HA1023, 30 minutes at room temperature.

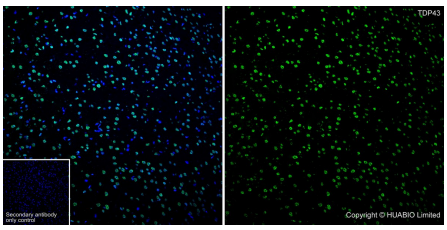

Fig5: Application: Immunofluorescence (IF-tissue)

Species: Mouse
Tissue: Brain
Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST
Blocking: 10% normal goat serum + 1% Triton X-100 + 0.3 M Glycine in TBST, 30 minutes at room temperature.
Primary antibody: HA610425, 1/500, overnight at 4°C.
Secondary antibody: Goat Anti-Rat IgG (iFluor™ 488, HA1133), 1.5 hours at room temperature.

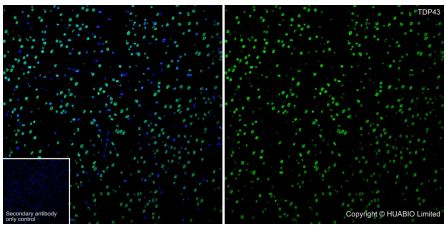

Fig6: Application: Immunofluorescence (IF-tissue)

Species: Rat
Tissue: Brain
Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST
Blocking: 10% normal goat serum + 1% Triton X-100 + 0.3 M Glycine in TBST, 30 minutes at room temperature.
Primary antibody: HA610425, 1/500, overnight at 4°C.
Secondary antibody: Goat Anti-Rat IgG (iFluor™ 488, HA1133), 1.5 hours at room temperature.

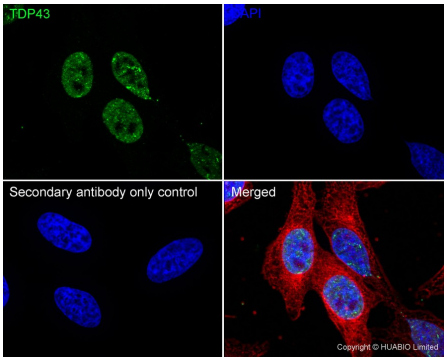

Fig7: Application: Immunocytochemistry (IF-cell)

Species: Human
Sample: HeLa (Human cervix adenocarcinoma epithelial cell)

Fixation: 4% Paraformaldehyde, 15 minutes at room temperature.
Permeabilization: 0.1% Triton X-100, 15 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 1 hour at room temperature.
Antibody dilution buffer: 1% BSA in PBST.

Primary antibody: HA610425, 1/50, overnight at 4°C.
Secondary antibody: Goat Anti-Rat IgG (iFluor™ 488, HA1133), 45 minutes at room temperature.
Counterstain: Beta tubulin (ET1602-4, Red), 1/200, overnight at 4℃. The nuclear counterstain was DAPI (Blue).

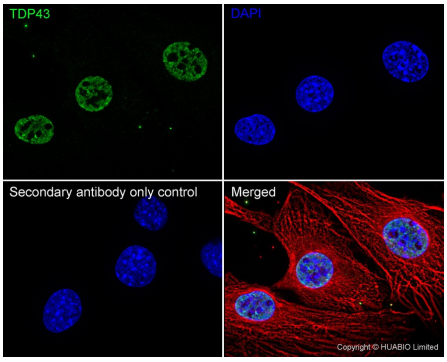

Fig8: Application: Immunocytochemistry (IF-cell)

Species: Mouse
Sample: C2C12 (Mouse myoblast)

Fixation: 4% Paraformaldehyde, 15 minutes at room temperature.
Permeabilization: 0.1% Triton X-100, 15 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 1 hour at room temperature.
Antibody dilution buffer: 1% BSA in PBST.

Primary antibody: HA610425, 1/50, overnight at 4°C.
Secondary antibody: Goat Anti-Rat IgG (iFluor™ 488, HA1133), 45 minutes at room temperature.
Counterstain: Beta tubulin (ET1602-4, Red), 1/200, overnight at 4℃. The nuclear counterstain was DAPI (Blue).

Background References

1. McMillan M et al. RNA methylation influences TDP43 binding and disease pathogenesis in models of amyotrophic lateral sclerosis and frontotemporal dementia. Mol Cell. 2023 Jan
2. Corbet GA et al. TDP43 ribonucleoprotein granules: physiologic function to pathologic aggregates. RNA Biol. 2021 Oct