

**TDP43 Antibody**  
Catalog # ASC10562**Specification****TDP43 Antibody - Product Information**

Application	WB, ICC, IF
Primary Accession	<a href="#">O13148</a>
Other Accession	<a href="#">ABO32290</a> , <a href="#">130750552</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Application Notes	TDP43 antibody can be used for detection of TDP43 by Western blot at 0.5 - 2 µg/mL. Antibody can also be used for immunocytochemistry starting at 5 µg/mL. For immunofluorescence start at 20 µg/mL.

**TDP43 Antibody - Additional Information**

Gene ID 23435

**Target/Specificity**

TARDBP; At least two isoforms are known to exist for this protein; this TDP43 antibody will recognize both isoforms.

**Reconstitution & Storage**

TDP43 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

**Precautions**

TDP43 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**TDP43 Antibody - Protein Information**

**Name** TARDBP {ECO:0000303|PubMed:18396105, ECO:0000312|HGNC:HGNC:11571}

**Function**

RNA-binding protein that is involved in various steps of RNA biogenesis and processing (PubMed:<a href="http://www.uniprot.org/citations/23519609" target="\_blank">23519609</a>). Preferentially binds, via its two RNA recognition motifs RRM1 and RRM2, to GU-repeats on RNA molecules predominantly localized within long introns and in the 3'UTR of mRNAs (PubMed:<a href="http://www.uniprot.org/citations/23519609" target="\_blank">23519609</a>, PubMed:<a href="http://www.uniprot.org/citations/24240615" target="\_blank">24240615</a>, PubMed:<a href="http://www.uniprot.org/citations/24464995" target="\_blank">24464995</a>). In turn, regulates the splicing of many non-coding and protein-coding RNAs including proteins involved in neuronal survival, as well as mRNAs that encode proteins relevant for neurodegenerative diseases

(PubMed:<a href="http://www.uniprot.org/citations/21358640" target="\_blank">21358640</a>, PubMed:<a href="http://www.uniprot.org/citations/29438978" target="\_blank">29438978</a>). Plays a role in maintaining mitochondrial homeostasis by regulating the processing of mitochondrial transcripts (PubMed:<a href="http://www.uniprot.org/citations/28794432" target="\_blank">28794432</a>). Regulates also mRNA stability by recruiting CNOT7/CAF1 deadenylase on mRNA 3'UTR leading to poly(A) tail deadenylation and thus shortening (PubMed:<a href="http://www.uniprot.org/citations/30520513" target="\_blank">30520513</a>). In response to oxidative insult, associates with stalled ribosomes localized to stress granules (SGs) and contributes to cell survival (PubMed:<a href="http://www.uniprot.org/citations/19765185" target="\_blank">19765185</a>, PubMed:<a href="http://www.uniprot.org/citations/23398327" target="\_blank">23398327</a>). Participates also in the normal skeletal muscle formation and regeneration, forming cytoplasmic myo-granules and binding mRNAs that encode sarcomeric proteins (PubMed:<a href="http://www.uniprot.org/citations/30464263" target="\_blank">30464263</a>). Plays a role in the maintenance of the circadian clock periodicity via stabilization of the CRY1 and CRY2 proteins in a FBXL3-dependent manner (PubMed:<a href="http://www.uniprot.org/citations/27123980" target="\_blank">27123980</a>). Negatively regulates the expression of CDK6 (PubMed:<a href="http://www.uniprot.org/citations/19760257" target="\_blank">19760257</a>). Regulates the expression of HDAC6, ATG7 and VCP in a PPIA/CYPA-dependent manner (PubMed:<a href="http://www.uniprot.org/citations/25678563" target="\_blank">25678563</a>).

#### **Cellular Location**

Nucleus. Cytoplasm. Cytoplasm, Stress granule Mitochondrion. Note=Continuously travels in and out of the nucleus (PubMed:18957508). Localizes to stress granules in response to oxidative stress (PubMed:19765185). A small subset localizes in mitochondria (PubMed:28794432).

#### **Tissue Location**

Ubiquitously expressed. In particular, expression is high in pancreas, placenta, lung, genital tract and spleen

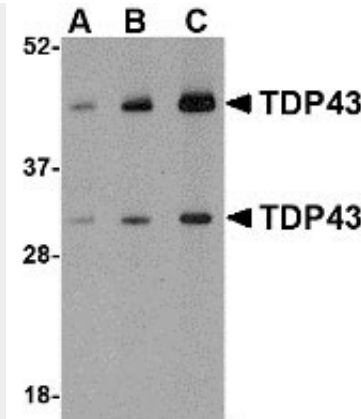
#### **TDP43 Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

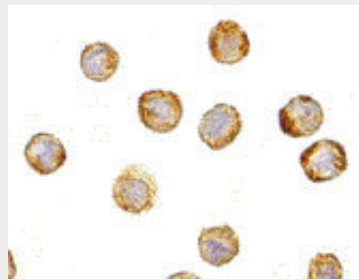
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### **TDP43 Antibody - Images**

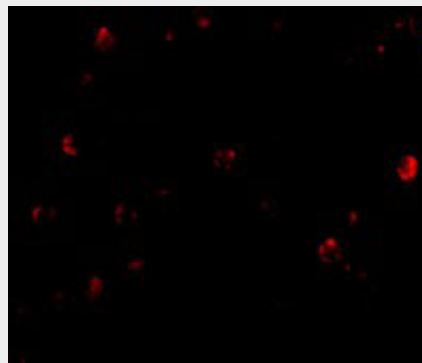




Western blot analysis of TDP43 in HeLa cell lysate with TDP43 antibody at (A) 0.5, (B) 1 and (C) 2 µg/mL.



Immunocytochemistry of TDP43 in HeLa cells with TDP43 antibody at 5 µg/mL.



Immunofluorescence of TDP43 in HeLa cells with TDP43 antibody at 20 µg/mL.

### **TDP43 Antibody - Background**

**TDP43 Antibody:** TDP43 was initially identified as a novel cellular protein that bound to HIV-1 virus TAR DNA sequence motifs and acts as a transcriptional repressor to the HIV-1 LTR. Later experiments revealed that TDP43 also regulates the splicing of exon 9 of the cystic fibrosis transmembrane conductance regulator (CFTR), most likely through the association with the UG repeats at the 3' splice site. A hyperphosphorylated, ubiquitinated, and cleaved form of TDP43 known as pathologic TDP43 is the major disease protein in ubiquitin-positive, tau-, and alpha-synuclein-negative frontotemporal dementia (FTLD-U). TDP43 is not related to TRBP1, an RNA binding protein that binds HIV-1 TAR RNA sequences.

### **TDP43 Antibody - References**

Ou SH, Wu F, Garcia-Martinez LF, et al. Cloning and characterization of a novel cellular protein, TDP-43, that binds to human immunodeficiency virus type 1 TAR DNA sequence motifs. *J*

Viol.1995; 69:3584-96.

Buratti E, Dork T, Zuccato E, et al. Nuclear factor TDP-43 and SR proteins promote in vitro and in vivo CFTR exon 9 skipping. EMBO J.2001; 20:1774-84.

Neumann M, Sampathu DM, Kwong LK, et al. Ubiquitinated TDP-43 in frontotemporal lobar degeneration and amyotrophic lateral sclerosis. Science2006; 314:42-3.