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# Product Information

**Anti-non-phospho-TDP-43**
produced in rabbit, IgG fraction of antiserum

Catalog Number **SAB4200411**

## Product Description

Anti-non-phospho-TDP-43 is produced in rabbit using as immunogen a synthetic peptide containing non-phosphorylated $Ser^{409}$ and $Ser^{410}$ of human TDP-43 (GeneID: 23435), conjugated to KLH. The corresponding sequence is identical in mouse TDP-43. Whole antiserum is purified using protein A immobilized on agarose to provide the IgG fraction of antiserum.

Anti-non-phospho-TDP-43 specifically recognizes human and mouse TDP-43 non-phosphorylated on $Ser^{409}$ and $Ser^{410}$. The antibody may be used in various immunochemical techniques including immunoblotting (~43 kDa) and immunofluorescence. Detection of the non-phosphorylated TDP-43 band by immunoblotting is specifically inhibited by the non-phosphorylated TDP-43 immunizing peptide, but not by the corresponding mono-phosphorylated peptides TDP-43 [$pSer^{409}$] and TDP-43 [$pSer^{410}$].

TDP-43 (TAR DNA binding protein,TARDP) belongs to the family of heterogeneous nuclear ribonucleoproteins (hnRNPs) that bind single stranded RNA. Members of the hnRNP family play multiple roles in the generation and processing of RNA, including transcription, splicing, transport and stability. TDP-43 has been implicated in the transcription regulation of HIV. TDP-43 has been identified as the major ubiquinated component of cytoplasmic inclusions in frontotemporal lobe degeneration subtype FTLD-U and amyotrophic lateral sclerosis (ALS).[1] TDP-43 is predominantly localized to the nucleus. Pathological TDP-43 forms abnormal inclusions in neuronal perikarya and neurites, indicating that redistribution of TDP-43 to the cytoplasm is a pathogenic mechanism. Several pathogenic TDP-43 mutations have been identified in familial ALS, causing aberrant cleavage of TDP-43 to C-terminal fragments, and predisposing nuclear TDP-43 to redistribute to the cytoplasm and form pathological aggregates.[1-3] Abnormal phosphorylation of TDP-43 at $Ser^{409/410}$ has also been observed in FTLD-U and ALS, suggesting a toxic gain of function leading to apoptosis.[4]

## Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

## Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

## Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

## Product Profile

Immunoblotting: a working antibody dilution of 1:500-1:1,000 is recommended using HepG2 cell lysates.

Immunofluorescence: a working antibody dilution of 1:200-1:400 is recommended using HeLa cells.

Immunohistochemistry: a working antibody dilution of 1:100-1:200 is recommended using formalin-fixed paraffin-embedded mouse kidney.

**Note:** In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

## References

1. Neumann, M., et al., *Science,* **314**, 130-133 (2006).
2. Sreedharan, J., et al., *Science*, **319**, 1668-1672 (2008).
3. Zhang, Y., et al., *Proc. Natl. Acad. Sci. USA*, **106**, 7607-7612 (2009).
4. Inukai, Y., et al., *FEBS Lett.*, **582**, 2899-2904 (2008).

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