

Product Information

Anti-TDP-43 (N-terminal region)

produced in rabbit, affinity isolated antibody

Product Number **SAB4200006**

Product Description

Anti-TDP-43 (N-terminal region) is produced in rabbit using as the immunogen a synthetic peptide corresponding to a sequence at the N-terminal of human TDP-43 (GenelD: 23435), conjugated to KLH. The corresponding sequence is identical in mouse TDP-43 and highly conserved (single amino acid substitution) in rat TDP-43. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-TDP-43 (N-terminal region) specifically recognizes human and mouse TDP-43. The antibody may be used in various immunochemical techniques including immunoblotting (~43 kDa), immunofluorescence and immunohistochemistry. Detection of the TDP-43 band by immunoblotting is specifically inhibited by the TDP-43 immunizing peptide.

TDP-43 (TAR DNA binding protein, TARDBP) 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 ubiquitinated component of cytoplasmic inclusions in frontotemporal lobe degeneration subtype FTL-D-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 FTL-D-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.

Antibody concentration: 1.0–1.5 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the 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 concentration of 1.5–3.0 µg/mL is recommended using HepG2 cells lysate

Immunofluorescence: a working concentration of 5–10 µg/mL is recommended using HepG2 cells.

Immunohistochemistry: a working concentration of 5–10 µg/mL is recommended using human or mouse kidney.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine 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).

VS,DS,KAA,PHC,MAM 06/19-1