SANTA CRUZ BIOTECHNOLOGY, INC.

TDP1 (H-300): sc-32924

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Tyrosyl-DNA phosphodiesterase 1 (TDP1), a DNA repair enzyme, catalyzes the hydrolysis of phophodiester bonds between tyrosine residues and DNA 3'-phosphates. In addition, TDP1 removes glycolate from single-stranded DNA containing a 3'-phosphoglycolate, suggesting a role in repair of free-radical mediated DNA double-strand breaks. A unique HKD signature motif with highly conserved lysine and histidine residues present in TDP1 places the enzyme in a distinct class within the phospholipase D superfamily. The hydrolytic reaction catalyzed by TDP1 occurs by a phosphoryl transfer reaction common to all members of the PLD superfamily. Loss-of-function mutations in TDP1 may cause spinocerebellar ataxia with axonal neuropathy by interfering with DNA transcription or by inducing apoptosis in postmitotic neurons.

REFERENCES

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2. Davies, D.R., et al. 2002. Insights into substrate binding and catalytic mechanism of human tyrosyl-DNA phophodiesterase (TDP1) from vanadate and tungstate-inhibited structures. J. Mol. Biol. 324: 917-932.
3. Inamdar, K.V., Pouliot, J.J., Zhou, T., Lees-Miller, S.P., Rasouli-Nia, A. and Povirk, L.F. 2002. Conversion of phosphoglycolate to phosphate termini on 3' overhangs of DNA double strand breaks by the human tyrosyl-DNA phosphodiesterase hTDP1. J. Biol. Chem. 277: 27162-27168.
4. Takashima, H., et al. 2002. Mutation of TDP1, encoding a topoisomerase I-dependent DNA damage repair enzyme in spinocerebellar ataxia with axonal neuropathy. Nat. Genet. 32: 267-272.
5. Entrez-Protein (NP_060789). World Wide Web URL: http://www.ncbi.nlm.nih.gov:80/entrez

CHROMOSOMAL LOCATION

Genetic locus: TDP1 (human) mapping to 14q32.11; Tdp1 (mouse) mapping to 12 E.

SOURCE

TDP1 (H-300) is a rabbit polyclonal antibody raised against amino acids 309-608 mapping at the C-terminus of TDP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

TDP1 (H-300) is recommended for detection of TDP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TDP1 (H-300) is also recommended for detection of TDP1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for TDP1 siRNA (h): sc-41056, TDP1 siRNA (m): sc-41057, TDP1 shRNA Plasmid (h): sc-41056-SH, TDP1 shRNA Plasmid (m): sc-41057-SH, TDP1 shRNA (h) Lentiviral Particles: sc-41056-V and TDP1 shRNA (m) Lentiviral Particles: sc-41057-V.

Molecular Weight of TDP1: 52 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.