SANTA CRUZ BIOTECHNOLOGY, INC.

TSEN54 (T-15): sc-165801

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The Power to Question

BACKGROUND

The tRNA-splicing endonuclease complex is responsible for identifying and cleaving pre-tRNA at both 5' and 3' splice sites, thereby releasing introns and free tRNA molecules with 2',3' cyclic phosphates and 5'-OH termini. In addition to its role in pre-tRNA splicing, the heterotetrameric endonuclease complex participates in mRNA processing and, via its association with pre-mRNA processing factors, is thought to link pre-tRNA and pre-mRNA splicing events. TSEN54 (tRNA splicing endonuclease 54 homolog), also known as HsSEN54 (SEN54 homolog) or tRNA-intron endonuclease Sen54, is a 526 amino acid protein belonging to the SEN54 family. Localizing to nucleus, TSEN54 is a member of a complex which identifies and cleaves the splice sites in pre-tRNA, and may also be involved in mRNA processing. Defects in TSEN54 may result in pontocerebellar hypoplasia (PCH) type 4 and 2A, characterized by structural abnormalities to the cerebellum, inferior olive, and ventral pons. TSEN54 exists as two alternatively spliced isoforms.

REFERENCES

1. Paushkin, S.V., et al. 2004. Identification of a human endonuclease complex reveals a link between tRNA splicing and pre-mRNA 3' end formation. Cell 117: 311-321.
2. Zody, M.C., et al. 2006. DNA sequence of human chromosome 17 and analysis of rearrangement in the human lineage. Nature 440: 1045-1049.
3. Budde, B.S., et al. 2008. tRNA splicing endonuclease mutations cause pontocerebellar hypoplasia. Nat. Genet. 40: 1113-1118.
4. Cassandrini, D., et al. 2010. Pontocerebellar hypoplasia: clinical, pathologic, and genetic studies. Neurology 75: 1459-1464.
5. Namavar, Y., et al. 2011. Clinical, neuroradiological and genetic findings in pontocerebellar hypoplasia. Brain 134: 143-156.
6. Namavar, Y., et al. 2011. TSEN54 mutations cause pontocerebellar hypoplasia type 5. Eur. J. Hum. Genet. 19: 724-726.
7. Kasher, P.R., et al. 2011. Impairment of the tRNA-splicing endonuclease subunit 54 (tsen54) gene causes neurological abnormalities and larval death in zebrafish models of pontocerebellar hypoplasia. Hum. Mol. Genet. 20: 1574-1584.

CHROMOSOMAL LOCATION

Genetic locus: TSEN54 (human) mapping to 17q25.1; Tsen54 (mouse) mapping to 11 E2.

SOURCE

TSEN54 (T-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TSEN54 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.

Blocking peptide available for competition studies, sc-165801 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TSEN54 (T-15) is recommended for detection of TSEN54 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); non cross-reactive with TSEN34 or TSEN2 .

TSEN54 (T-15) is also recommended for detection of TSEN54 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for TSEN54 siRNA (h): sc-93849, TSEN54 siRNA (m): sc-154715, TSEN54 shRNA Plasmid (h): sc-93849-SH, TSEN54 shRNA Plasmid (m): sc-154715-SH, TSEN54 shRNA (h) Lentiviral Particles: sc-93849-V and TSEN54 shRNA (m) Lentiviral Particles: sc-154715-V.

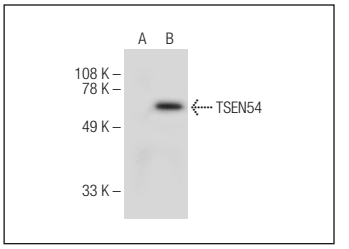
Molecular Weight of TSEN54 isoform 1/2: 59/20 kDa.

Positive Controls: TSEN54 (h): 293T Lysate: sc-116179.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



TSEN54 (T-15): sc-165801. Western blot analysis of TSEN54 expression in non-transfected: sc-117752 (**A**) and human TSEN54 transfected: sc-116179 (**B**) 293T whole cell lysates.

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.