

NUDT14 (V-15): sc-107038

BACKGROUND

NUDT14 (nudix (nucleoside diphosphate linked moiety X)-type motif 14), also known as UGPP or UGPPase (uridine diphosphate glucose pyrophosphatase), is a 222 amino acid cytoplasmic protein that contains one nudix hydrolase domain and belongs to the nudix hydrolase family. NUDT14 hydrolyzes ADP-ribose into ribose 5-phosphate and AMP, and UDP-glucose to glucose 1-phosphate and UMP; other nucleotide sugars such as CDP-glucose, ADP-glucose, GDP-mannose and GDP-glucose are poor NUDT14 substrates. Existing as a homodimer, NUDT14 binds magnesium as a cofactor and is encoded by a gene located on human chromosome 14. Chromosome 14 encodes the presenilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD). The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder α 1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609219. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Yagi, T., et al. 2003. Cloning, expression and characterization of a mammalian Nudix hydrolase-like enzyme that cleaves the pyrophosphate bond of UDP-glucose. *Biochem. J.* 370: 409-415.
3. Avramopoulos, D., et al. 2005. Linkage to chromosome 14q in Alzheimer's disease (AD) patients without psychotic symptoms. *Am. J. Med. Genet. B Neuropsychiatr. Genet.* 132: 9-13.
4. Mildvan, A.S., et al. 2005. Structures and mechanisms of Nudix hydrolases. *Arch. Biochem. Biophys.* 433: 129-143.
5. Heyen, C.A., et al. 2009. Characterization of mouse UDP-glucose pyrophosphatase, a Nudix hydrolase encoded by the *Nudt14* gene. *Biochem. Biophys. Res. Commun.* 390: 1414-1418.
6. Larner, A.J. and Doran, M. 2009. Genotype-phenotype relationships of Presenilin 1 mutations in Alzheimer's disease: an update. *J. Alzheimers Dis.* 17: 259-265.

CHROMOSOMAL LOCATION

Genetic locus: NUDT14 (human) mapping to 14q32.33; *Nudt14* (mouse) mapping to 12 F1.

SOURCE

NUDT14 (V-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NUDT14 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-107038 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NUDT14 (V-15) is recommended for detection of NUDT14 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 other NUDT family members.

Suitable for use as control antibody for NUDT14 siRNA (h): sc-92194, NUDT14 siRNA (m): sc-150104, NUDT14 shRNA Plasmid (h): sc-92194-SH, NUDT14 shRNA Plasmid (m): sc-150104-SH, NUDT14 shRNA (h) Lentiviral Particles: sc-92194-V and NUDT14 shRNA (m) Lentiviral Particles: sc-150104-V.

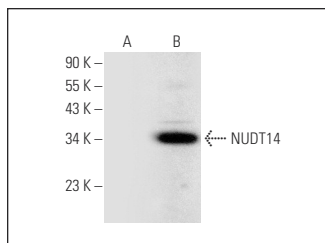
Molecular Weight of NUDT14: 28 kDa.

Positive Controls: NUDT14 (h): 293T Lysate: sc-372778.

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



NUDT14 (V-15): sc-107038. Western blot analysis of NUDT14 expression in non-transfected: sc-117752 (A) and human NUDT14 transfected: sc-372778 (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.

PROTOCOLS

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