SANTA CRUZ BIOTECHNOLOGY, INC.

Antiquitin (H-149): sc-292592

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate the $NADP^+$-dependent oxidation of aldehydes into acids and play an important role in the detoxification of alcohol-derived acetaldehyde, as well as in lipid peroxidation and in the metabolism of corticosteroids, biogenic amines and neurotransmitters. Antiquitin, also known as ALDH7A1 (aldehyde dehydrogenase 7 family, member A1), ATQ1, EPD or PDE, is a 539 amino acid protein that is highly expressed in ovary, heart, eye, kidney and ear tissue and plays an important role in the detoxification of lipid peroxidation- and alcohol metabolism-related aldehydes. Mutations in the gene encoding Antiquitin are the cause of pyridoxine-dependent epilepsy (PDE), a rare disorder that is characterized by seizures that begin at infancy and involve muscle rigidity, convulsions and loss of consciousness. Additionally, PDE is associated with poor muscle tone, hypothermia and irritability.

REFERENCES

1. Skvorak, A.B., et al. 1997. An ancient conserved gene expressed in the human inner ear: identification, expression analysis, and chromosomal mapping of human and mouse Antiquitin (ATQ1). Genomics 46: 191-199.
2. Mills, P.B., et al. 2006. Mutations in Antiquitin in individuals with pyridoxine-dependent seizures. Nat. Med. 12: 307-309.
3. Salomons, G.S., et al. 2007. An intriguing "silent" mutation and a founder effect in Antiquitin (ALDH7A1). Ann. Neurol. 62: 414-418.
4. Bok, L.A., et al. 2007. Pyridoxine-dependent seizures in Dutch patients: diagnosis by elevated urinary α-aminoadipic semialdehyde levels. Arch. Dis. Child. 92: 687-689.
5. Plecko, B., et al. 2007. Biochemical and molecular characterization of 18 patients with pyridoxine-dependent epilepsy and mutations of the Antiquitin (ALDH7A1) gene. Hum. Mutat. 28: 19-26.
6. Kanno, J., et al. 2007. Allelic and non-allelic heterogeneities in pyridoxine dependent seizures revealed by ALDH7A1 mutational analysis. Mol. Genet. Metab. 91: 384-389.

CHROMOSOMAL LOCATION

Genetic locus: ALDH7A1 (human) mapping to 5q23.2; Aldh7a1 (mouse) mapping to 18 D3.

SOURCE

Antiquitin (H-149) is a rabbit polyclonal antibody raised against amino acids 391-539 mapping at the C-terminus of Antiquitin 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.

APPLICATIONS

Antiquitin (H-149) is recommended for detection of Antiquitin 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).

Antiquitin (H-149) is also recommended for detection of Antiquitin in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Antiquitin siRNA (h): sc-72507, Antiquitin siRNA (m): sc-72508, Antiquitin shRNA Plasmid (h): sc-72507-SH, Antiquitin shRNA Plasmid (m): sc-72508-SH, Antiquitin shRNA (h) Lentiviral Particles: sc-72507-V and Antiquitin shRNA (m) Lentiviral Particles: sc-72508-V.

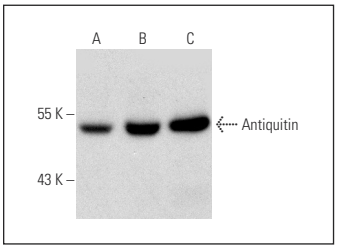
Molecular Weight of Antiquitin: 55 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or SW480 cell lysate: sc-2219.

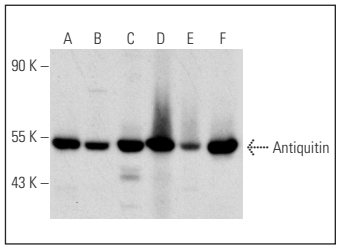
RECOMMENDED SECONDARY REAGENTS

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.

DATA



Antiquitin (H-149): sc-292592. Western blot analysis of Antiquitin expression in HeLa (**A**), Hep G2 (**B**) and SW480 (**C**) whole cell lysates.



Antiquitin (H-149): sc-292592. Western blot analysis of Antiquitin expression in RT-4 (**A**), U-251-MG (**B**) and c4 (**C**) whole cell lysates and mouse kidney (**D**), mouse testis (**E**) and human liver (**F**) tissue extracts.

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.