

DDO (M-40): sc-98496

BACKGROUND

DDO (D-aspartate oxidase), also known as DASOX, is a 341 amino acid protein that localizes to peroxisomes and exists as two alternatively spliced isoforms, designated DDO-1 and DDO-2. Using FAD or 6-hydroxyflavin adenine dinucleotide as cofactors, DDO functions as a peroxisomal flavoprotein that selectively catalyzes the oxidative deamination of D-aspartate and N-methyl D-aspartate. Human DDO shares 86% sequence similarity with its bovine counterpart, suggesting a conserved role between species. The gene encoding DDO maps to human chromosome 6q21, which contains 170 million base pairs and comprises nearly 6% of the human genome. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer, suggesting the presence of a cancer susceptibility locus. Additionally, Porphyria cutanea tarda, Parkinson's disease, Stickler syndrome and a susceptibility to bipolar disorder are all associated with genes that map to chromosome 6q21.

REFERENCES

1. Barker, R.F. and Hopkinson, D.A. 1977. The genetic and biochemical properties of the D-amino acid oxidases in human tissues. *Ann. Hum. Genet.* 41: 27-42.
2. Van Veldhoven, P.P., et al. 1991. D-aspartate oxidase, a peroxisomal enzyme in liver of rat and man. *Biochim. Biophys. Acta.* 1073: 203-208.
3. Nagasaki, H. 1994. Gender-related differences of mouse liver D-aspartate oxidase in the activity and response to administration of D-aspartate and peroxisome proliferators. *Int. J. Biochem.* 26: 415-423.
4. Simonic, T., et al. 1997. cDNA cloning and expression of the flavoprotein D-aspartate oxidase from bovine kidney cortex. *Biochem. J.* 322: 729-735.
5. Setoyama, C. and Miura, R. 1997. Structural and functional characterization of the human brain D-aspartate oxidase. *J. Biochem.* 121: 798-803.
6. Amery, L., et al. 1998. C-terminal tripeptide Ser-Asn-Leu (SNL) of human D-aspartate oxidase is a functional peroxisome-targeting signal. *Biochem. J.* 336: 367-371.
7. Zaar, K., et al. 2002. Cellular and subcellular distribution of D-aspartate oxidase in human and rat brain. *J. Comp. Neurol.* 450: 272-282.

CHROMOSOMAL LOCATION

Genetic locus: DDO (human) mapping to 6q21; Ddo (mouse) mapping to 10 B1.

SOURCE

DDO (M-40) is a rabbit polyclonal antibody raised against amino acids 153-192 mapping within an internal region of DDO of mouse origin.

PRODUCT

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

RESEARCH USE

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

APPLICATIONS

DDO (M-40) is recommended for detection of DDO of mouse, rat and, to a lesser extent, 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).

DDO (M-40) is also recommended for detection of DDO in additional species, including bovine and porcine.

Suitable for use as control antibody for DDO siRNA (h): sc-77101, DDO siRNA (m): sc-77102, DDO shRNA Plasmid (h): sc-77101-SH, DDO shRNA Plasmid (m): sc-77102-SH, DDO shRNA (h) Lentiviral Particles: sc-77101-V and DDO shRNA (m) Lentiviral Particles: sc-77102-V.

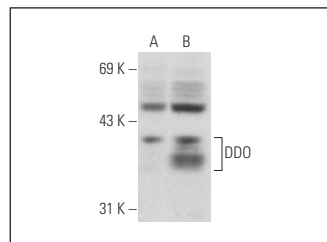
Molecular Weight of DDO: 37 kDa.

Positive Controls: DDO (m): 293T Lysate: sc-119700, rat liver extract: sc-2395 or mouse brain extract: sc-2253.

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



DDO (M-40): sc-98496. Western blot analysis of DDO expression in non-transfected: sc-117752 (A) and mouse DDO transfected: sc-119700 (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.

PROTOCOLS

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