

DAAO (M-15): sc-26078

BACKGROUND

D-amino acid oxidase (DAAO) metabolizes exogenous D-amino acids that accumulate during aging, and may modulate the level of D-serine in the brain, acting as a detoxifying agent. DAAO is specific for the D-configuration of amino acids and exhibits a preference for those with small, hydrophobic side chains and polar, aromatic and basic functional groups. Single base-pair substitutions at certain amino acid residues of the DAAO enzyme result in the loss of DAO activity in mice. Mutation of the enzyme at residue Y238, one of the few conserved residues in the active site of DAAO, leads to a significantly slower rate of product release relative to the wild-type enzyme, indicating the importance of this residue in controlling access to the active site. In addition, the other conserved residues in the active site of DAAO do not play a role in acid-base catalysis but rather are involved in substrate interactions, which along with the mode of substrate orientation into the active site, suggest a hybrid transfer type of mechanism for catalysis.

REFERENCES

1. Sasaki, M., Konno, R., Nishio, M., Niwa, A., Yasumura, Y. and Enami, J. 1992. A single-base-pair substitution abolishes D-amino-acid oxidase activity in the mouse. *Biochim. Biophys. Acta* 1139: 315-318.
2. Mujawar, S.K. 1999. D-amino acid oxidase: its potential in the production of 7-aminocephalosporanic acid. *Hindustan Antibiot. Bull.* 41: 1-14.
3. Pilone, M.S. 2000. D-amino acid oxidase: new findings. *Cell. Mol. Life Sci.* 57: 1732-1747.
4. Boselli, A., Sacchi, S., Job, V., Pilone, M.S. and Pollegioni, L. 2002. Role of tyrosine 238 in the active site of *Rhodotorula gracilis* D-amino acid oxidase. A site-directed mutagenesis study. *Eur. J. Biochem.* 269: 4762-4771.
5. Caldinelli, L., 2004. Unfolding intermediate in the peroxisomal flavoprotein D-amino acid oxidase. *J. Biol. Chem.* 279: 28426-28434.
6. SWISS-PROT/TrEMBL (P18894). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: DAO (human) mapping to 12q24.11; Dao (mouse) mapping to 5 F.

SOURCE

DAAO (M-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of DAAO 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.

Blocking peptide available for competition studies, sc-26078 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

DAAO (M-15) is recommended for detection of DAAO 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).

DAAO (M-15) is also recommended for detection of DAAO in additional species, including canine.

Suitable for use as control antibody for DAAO siRNA (h): sc-105269, DAAO siRNA (m): sc-142864, DAAO shRNA Plasmid (h): sc-105269-SH, DAAO shRNA Plasmid (m): sc-142864-SH, DAAO shRNA (h) Lentiviral Particles: sc-105269-V and DAAO shRNA (m) Lentiviral Particles: sc-142864-V.

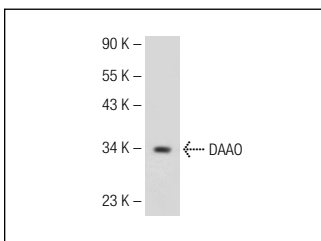
Molecular Weight (predicted) of DAAO: 39 kDa.

Molecular Weight (observed) of DAAO: 34 kDa.

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



DAAO (M-15): sc-26078. Western blot analysis of DAAO expression in Hep G2 whole cell lysate.

RESEARCH USE

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

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Try **DAAO (B-3): sc-398757**, our highly recommended monoclonal alternative to DAAO (M-15).