

# hepatic OAT (F-2): sc-374310

## BACKGROUND

OAT (ornithine aminotransferase (mitochondrial), ornithine-oxo-acid aminotransferase) is a 439 amino acid protein encoded by the human gene OAT. OAT belongs to the class III pyridoxal-phosphate-dependent aminotransferase family and is usually found as a homotetramer in the mitochondrion matrix. OAT catalyzes the major catalytic reaction for ornithine. Ornithinemia, presumably due to deficiency of ornithine ketoacid aminotransferase (OAT) has been found in patients with gyrate atrophy of the choroid and retina. The clinical history of gyrate atrophy is usually night blindness that begins in late childhood, accompanied by sharply demarcated circular areas of chorioretinal atrophy. During the second and third decades the areas of atrophy enlarge. The hepatic cleavage product, hepatic OAT, is formed by cleaving a 25 amino acid transit peptide from the N-terminus of the OAT precursor. The renal form is produced by cleaving a 35 amino acid transit peptide from the N-terminus.

## REFERENCES

1. Ramesh, V., et al. 1991. Molecular pathology of gyrate atrophy of the choroid and retina due to ornithine aminotransferase deficiency. *Mol. Biol. Med.* 8: 81-93.
2. Michaud, J., et al. 1992. Strand-separating conformational polymorphism analysis: efficacy of detection of point mutations in the human ornithine  $\delta$ -aminotransferase gene. *Genomics* 13: 389-394.
3. Shah, S.A., et al. 1997. Human ornithine aminotransferase complexed with L-canaline and gabaculine: structural basis for substrate recognition. *Structure* 5: 1067-1075.
4. Buard, J., et al. 2000. Somatic versus germline mutation processes at minisatellite CEB1 (D2S90) in humans and transgenic mice. *Genomics* 65: 95-103.
5. Cleary, M.A., et al. 2005. Ornithine aminotransferase deficiency: diagnostic difficulties in neonatal presentation. *J. Inherit. Metab. Dis.* 28: 673-679.
6. Deignan, J.L., et al. 2006. Ornithine deficiency in the arginase double knock-out mouse. *Mol. Genet. Metab.* 89: 87-96.
7. De Angelis, P.M., et al. 2006. Cellular response to 5-fluorouracil (5-FU) in 5-FU-resistant colon cancer cell lines during treatment and recovery. *Mol. Cancer* 5: 20.
8. Santos, L., et al. 2006. Dietary compliance in ornithine aminotransferase deficiency. *J. Inherit. Metab. Dis.* 29: 240.

## CHROMOSOMAL LOCATION

Genetic locus: OAT (human) mapping to 10q26.13; Oat (mouse) mapping to 7 F3.

## SOURCE

hepatic OAT (F-2) is a mouse monoclonal antibody raised against amino acids 101-230 mapping within an internal region of OAT of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

hepatic OAT (F-2) is recommended for detection of hepatic OAT of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

Suitable for use as control antibody for OAT siRNA (h): sc-62709, OAT siRNA (m): sc-62710, OAT shRNA Plasmid (h): sc-62709-SH, OAT shRNA Plasmid (m): sc-62710-SH, OAT shRNA (h) Lentiviral Particles: sc-62709-V and OAT shRNA (m) Lentiviral Particles: sc-62710-V.

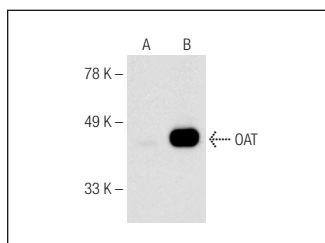
Molecular Weight of hepatic OAT: 49 kDa.

Positive Controls: OAT (h): 293 Lysate: sc-110806.

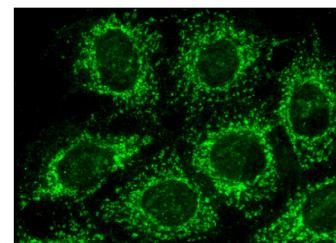
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



hepatic OAT (F-2): sc-374310. Western blot analysis of OAT expression in non-transfected: sc-110760 (A) and human OAT transfected: sc-110806 (B) 293 whole cell lysates.



hepatic OAT (F-2): sc-374310. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## 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](http://www.scbt.com) for detailed protocols and support products.