

OAT1 (1F2): sc-293323

BACKGROUND

The organic anion transporter (OAT) family of proteins mediate the secretion of exogenous and endogenous metabolites from tissues throughout the body. OAT1 (organic anion transporter 1), a 563 amino acid protein, and OAT3 (organic anion transporter 3), a 542 amino acid protein, are two members of the OAT family and are highly expressed in kidneys. Localized specifically to the basolateral membrane, OAT1 and OAT3 are involved in the elimination of toxic organic anions, such as benzylpenicillin and cimetidine, from proximal renal tubules. Via their ability to remove anions from renal tissues, OAT1 and OAT3 are able to regulate the amount of toxins within the kidneys. Additionally, OAT1 functions as an organic anion exchanger that couples the uptake of one organic anion molecule with the efflux of one endogenous dicarboxylic acid molecule, such as ketoglutarate. Four isoforms of OAT1 and three isoforms of OAT3 are expressed due to alternative splicing events.

REFERENCES

- Lu, R., et al. 1999. Cloning of the human kidney PAH transporter: narrow substrate specificity and regulation by protein kinase C. *Am. J. Physiol.* 276: F295-F303.
- Race, J.E., et al. 1999. Molecular cloning and characterization of two novel human renal organic anion transporters (hOAT1 and hOAT3). *Biochem. Biophys. Res. Commun.* 255: 508-514.
- Bahn, A., et al. 2000. Genomic structure and *in vivo* expression of the human organic anion transporter 1 (hOAT1) gene. *Biochem. Biophys. Res. Commun.* 275: 623-630.
- Sun, W., et al. 2001. Isolation of a family of organic anion transporters from human liver and kidney. *Biochem. Biophys. Res. Commun.* 283: 417-422.
- Vallon, V., et al. 2008. Overlapping *in vitro* and *in vivo* specificities of the organic anion transporters OAT1 and OAT3 for loop and thiazide diuretics. *Am. J. Physiol. Renal Physiol.* 294: F867-F873.
- Chen, J., et al. 2008. Adaptive responses of renal organic anion transporter 3 (OAT3) during cholestasis. *Am. J. Physiol. Renal Physiol.* 295: F247-F252.
- Zhang, R., et al. 2008. Upregulation of rat renal cortical organic anion transporter (OAT1 and OAT3) expression in response to ischemia/reperfusion injury. *Am. J. Nephrol.* 28: 772-783.
- Hu, S., et al. 2008. Interaction of imatinib with human organic ion carriers. *Clin. Cancer Res.* 14: 3141-3148.
- Ogasawara, K., et al. 2008. Analysis of regulatory polymorphisms in organic ion transporter genes (SLC22A) in the kidney. *J. Hum. Genet.* 53: 607-614.

CHROMOSOMAL LOCATION

Genetic locus: SLC22A6 (human) mapping to 11q12.3.

SOURCE

OAT1 (1F2) is a mouse monoclonal antibody raised against amino acids 451-550 of OAT1 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

OAT1 (1F2) is recommended for detection of OAT1 of 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), immunohistochemistry (including paraffin-embedded sections) (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 OAT1 siRNA (h): sc-96343, OAT1 shRNA Plasmid (h): sc-96343-SH and OAT1 shRNA (h) Lentiviral Particles: sc-96343-V.

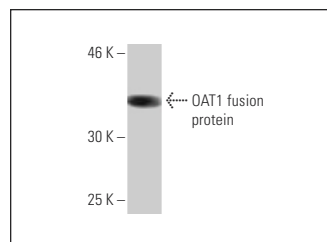
Molecular Weight (predicted) of OAT1: 62 kDa.

Molecular Weight (observed) of OAT1: 78 kDa.

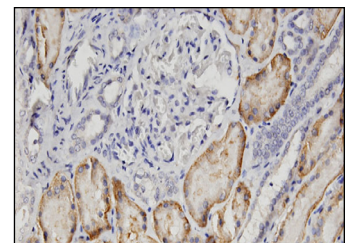
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



OAT1 (1F2): sc-293323. Western blot analysis of human recombinant OAT1 fusion protein.



OAT1 (1F2): sc-293323. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic and membrane staining.

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.