

MATE1 (S-14): sc-138983

BACKGROUND

Transporters are expressed in a wide variety of tissues where they perform the critical function of enabling anionic and cationic chemicals of exogenous and endogenous origin to cross otherwise impermeable cell membranes. The multidrug and toxin extrusion (MATE) transporters mediate cellular efflux of a variety of organic cations, including many drugs, and are involved in excretion of toxic electrolytes through urine and bile. Members of the MATE family share homology with the bacterial MATE protein family, which is responsible for drug resistance. MATE1 (multidrug and toxin extrusion protein 1), also known as SLC47A1, is a 570 amino acid multi-pass membrane protein that predominantly localizes to the plasma membrane but is also found in intracellular organelles. Expressed in adrenal gland, and to a lower extent in liver, skeletal muscle and kidney, MATE1 is responsible for the secretion of cationic drugs across the brush border membranes. MATE1 exists as three isoforms, which are produced by alternative splicing events.

REFERENCES

- Masuda, S., et al. 2006. Identification and functional characterization of a new human kidney-specific H⁺/organic cation antiporter, kidney-specific multidrug and toxin extrusion 2. *J. Am. Soc. Nephrol.* 17: 2127-2135.
- Zhang, X., et al. 2007. Molecular identification and functional characterization of rabbit MATE1 and MATE2-K. *Am. J. Physiol. Renal Physiol.* 293: F360-F370.
- Tanihara, Y., et al. 2007. Substrate specificity of MATE1 and MATE2-K, human multidrug and toxin extrusions/H⁺-organic cation antiporters. *Biochem. Pharmacol.* 74: 359-371.
- Koepsell, H., et al. 2007. Polyspecific organic cation transporters: structure, function, physiological roles, and biopharmaceutical implications. *Pharm. Res.* 24: 1227-1251.
- Terada, T. and Inui, K. 2008. Physiological and pharmacokinetic roles of H⁺/organic cation antiporters (MATE/SLC47A). *Biochem. Pharmacol.* 75: 1689-1696.
- Lickteig, A.J., et al. 2008. Tissue distribution, ontogeny and induction of the transporters Multidrug and toxin extrusion (MATE) 1 and MATE2 mRNA expression levels in mice. *Life Sci.* 83: 59-64.
- Tanihara, Y., et al. 2009. Protective effect of concomitant administration of imatinib on cisplatin-induced nephrotoxicity focusing on renal organic cation transporter OCT2. *Biochem. Pharmacol.* 78: 1263-1271.
- Matsushima, S., et al. 2009. The inhibition of human multidrug and toxin extrusion 1 is involved in the drug-drug interaction caused by cimetidine. *Drug Metab. Dispos.* 37: 555-559.
- Tsuda, M., et al. 2009. Involvement of human multidrug and toxin extrusion 1 in the drug interaction between cimetidine and metformin in renal epithelial cells. *J. Pharmacol. Exp. Ther.* 329: 185-191.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: Slc47a1 (mouse) mapping to 11 B2.

SOURCE

MATE1 (S-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of MATE1 of mouse origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-138983 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MATE1 (S-14) is recommended for detection of MATE1 of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with MATE2.

Suitable for use as control antibody for MATE1 siRNA (m): sc-149293, MATE1 shRNA Plasmid (m): sc-149293-SH and MATE1 shRNA (m) Lentiviral Particles: sc-149293-V.

Molecular Weight of MATE1 isoforms: 32/62/64 kDa.

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) 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.

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.