SANTA CRUZ BIOTECHNOLOGY, INC.

MRP3 (M3II-21): sc-59612

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The two members of the large family of ABC transporters known to confer multidrug resistance in human cancer cells are the MDR1 P-glycoprotein and the multidrug-resistance protein MRP1. MRP1 is an integral membrane protein that contains an MDR-like core, an N-terminal membrane-bound region and a cytoplasmic linker, and it is expressed in various cerebral cells, as well as in lung, testis and peripheral blood. The MRP gene family also includes MRP2, which is alternatively designated cMOAT (for canalicular multispecific organic anion transporter) and MRP3, which are both conjugate export pumps expressed predominantly in hepatocytes. MRP2 localizes exclusively to the apical membrane and is constitutively expressed at a high level in normal liver cells. Conversely, MRP3 localizes to the basolateral membrane where it also mediates the transport of the organic anion S-(2,4-dinitrophenyl-) glutathione toward the basolateral side of the membrane. MRP3 is normally expressed at comparatively lower levels than MRP2 and increases only when secretion across the apical membrane by MRP2 is impaired. MRP6 is highly expressed in liver and kidney, whereas MRP4 and MRP5 are detected in various tissues, yet at much lower levels of expression.

CHROMOSOMAL LOCATION

Genetic locus: ABCC3 (human) mapping to 17q21.33; Abcc3 (mouse) mapping to 11 D.

SOURCE

MRP3 (M3II-21) is a mouse monoclonal antibody raised against amino acids 830-949 of MRP3 of human origin.

PRODUCT

Each vial contains 500 µl culture supernatant containing IgG_{2b} with < 0.1% sodium azide and 0.7% stabilizer protein.

APPLICATIONS

MRP3 (M3II-21) is recommended for detection of MRP3 of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200) and flow cytometry (10-20 µl per 1 x 10^6 cells); non cross-reactive with MDR1, MRP1, MRP2 or MRP5 gene products.

Suitable for use as control antibody for MRP3 siRNA (h): sc-40748, MRP3 siRNA (m): sc-40749, MRP3 shRNA Plasmid (h): sc-40748-SH, MRP3 shRNA Plasmid (m): sc-40749-SH, MRP3 shRNA (h) Lentiviral Particles: sc-40748-V and MRP3 shRNA (m) Lentiviral Particles: sc-40749-V.

Molecular Weight of MRP3 isoforms: 169/137/55/32/65 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285 or COLO 320DM cell lysate: sc-2226.

PROTOCOLS

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

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

SELECT PRODUCT CITATIONS

1. Tiwari, A.K., et al. 2013. Overlapping functions of ABC transporters in topotecan disposition as determined in gene knockout mouse models. Mol. Cancer Ther. 12: 1343-1355.
2. Fanelli, M., et al. 2016. Targeting ABCB1 and ABCC1 with their specific inhibitor CBT-1® can overcome drug resistance in osteosarcoma. Curr. Cancer Drug Targets 16: 261-274.
3. Järvinen, E., et al. 2017. Selectivity in the efflux of glucuronides by human transporters: MRP4 is highly active toward 4-methylumbelliferone and 1-naphthol glucuronides, while MRP3 exhibits stereoselective propranolol glucuronide transport. Mol. Pharm. 14: 3299-3311.
4. Afrouzian, M., et al. 2018. Role of the efflux transporters BCRP and MRP1 in human placental bio-disposition of pravastatin. Biochem. Pharmacol. 156: 467-478.
5. Mao, X.M., et al. 2018. Retinoic acid receptor α knockdown suppresses the tumorigenicity of esophageal carcinoma via Wnt/β-catenin pathway. Dig. Dis. Sci. 63: 3348-3358.
6. Adamska, A., et al. 2019. Pharmacological inhibition of ABCC3 slows tumour progression in animal models of pancreatic cancer. J. Exp. Clin. Cancer Res. 38: 312.
7. Pérez-Pineda, S.I., et al. 2021. Effect of bile acids on the MRP3 and MRP4 expression: *in vitro* study on Hep G2 cells. Ann. Hepatol. 24: 100325.
8. Du, Z., et al. 2021. TPGS-galactose-modified polydopamine co-delivery nanoparticles of nitric oxide donor and doxorubicin for targeted chemo-photothermal therapy against drug-resistant hepatocellular carcinoma. ACS Appl. Mater. Interfaces 13: 35518-35532.
9. Liu, F., et al. 2021. Prenatal ethanol exposure increases maternal bile acids through placental transport pathway. Toxicology 458: 152848.
10. Reyes-Avendaño, I., et al. 2022. Quercetin regulates key components of the cellular microenvironment during early hepatocarcinogenesis. Antioxidants 11: 358.
11. Malinowski, D., et al. 2022. Membrane transporters and carriers in human seminal vesicles. J. Clin. Med. 11: 2213.
12. Jiang, L.P., et al. 2022. Is platelet responsiveness to clopidogrel attenuated in overweight or obese patients and why? A reverse translational study in mice. Br. J. Pharmacol. 179: 46-64.

RESEARCH USE

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