SANTA CRUZ BIOTECHNOLOGY, INC.

MDR1 (D-11): sc-55510

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cells selected for resistance to a single cytotoxic drug may become cross-resistant to a broad range of drugs with different structures and cellular targets. This phenomenon is called multiple drug resistance (MDR). MDR proteins (Mdrs) are members of a highly conserved superfamily of ATP-binding cassette transport proteins. MDR1 is an apical transmembrane protein that is an integral part of the blood-brain barrier and functions as a drug-transport pump transporting a variety of drugs from the brain back into the blood. The MDR1 gene is also known as ABCB1 and is located on human chromosome 7. The mouse homolog of MDR1 is known as Mdr-3. Interestingly, a murine protein by the name of Mdr-1 exists and is encoded by the murine Abcb1b gene, but it is not homologous with human Mdr-1.

CHROMOSOMAL LOCATION

Genetic locus: ABCB1 (human) mapping to 7q21.12; Abcb1b (mouse) mapping to 5 A1.

SOURCE

Mdr-1 (D-11) is a mouse monoclonal antibody raised against amino acids 1040-1280 of Mdr-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MDR1 (D-11) is available conjugated to agarose (sc-55510 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-55510 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-55510 PE), fluorescein (sc-55510 FITC), Alexa Fluor® 488 (sc-55510 AF488), Alexa Fluor® 546 (sc-55510 AF546), Alexa Fluor® 594 (sc-55510 AF594) or Alexa Fluor® 647 (sc-55510 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-55510 AF680) or Alexa Fluor® 790 (sc-55510 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MDR1 (D-11) is recommended for detection of MDR1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1,000), 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); may cross-react with Mdr-3.

Suitable for use as control antibody for MDR1 siRNA (h): sc-29395, MDR1 siRNA (m): sc-35891, MDR1 shRNA Plasmid (h): sc-29395-SH, MDR1 shRNA Plasmid (m): sc-35891-SH, MDR1 shRNA (h) Lentiviral Particles: sc-29395-V and MDR1 shRNA (m) Lentiviral Particles: sc-35891-V.

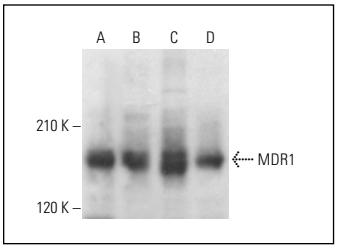
Molecular Weight of MDR1: 170 kDa.

Positive Controls: MES-SA/Dx5 cell lysate: sc-2284, c4 whole cell lysate: sc-364186 or KNRK whole cell lysate: sc-2214.

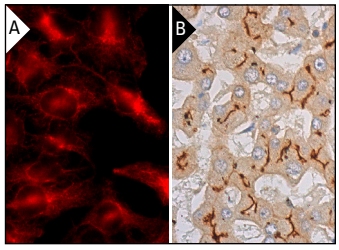
STORAGE

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

DATA



MDR1 (D-11): sc-55510. Western blot analysis of MDR1 expression in MES-SA/Dx5 (**A**), ACHN (**B**), c4 (**C**) and KNRK (**D**) whole cell lysates.



MDR1 (D-11): sc-55510. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing membrane and cytoplasmic staining of hepatocytes (**B**).

SELECT PRODUCT CITATIONS

1. Sauvant, C., et al. 2008. Acidosis induces multi-drug resistance in rat prostate cancer cells (AT_1) *in vitro* and *in vivo* by increasing the activity of the p-glycoprotein via activation of p38. Int. J. Cancer 123: 2532-2542.
2. Bolzati, C., et al. 2013. ^{99m}Tc(N)-DBODC(5), a potential radiolabeled probe for SPECT of multidrug resistance: *in vitro* study. J. Biol. Inorg. Chem. 18: 523-538.
3. Salerno, M., et al. 2014. Impairment of lysosomal activity as a therapeutic modality targeting cancer stem cells of embryonal rhabdomyosarcoma cell line RD. PLoS ONE 9: e110340.
4. Cui, Y., et al. 2015. Cytokine-induced killer cells induce apoptosis and inhibit the Akt/nuclear factor-κB signaling pathway in cisplatin-resistant human glioma U87MG cells. Mol. Med. Rep. 12: 7027-7032.
5. Lan, W.G., et al. 2016. Silencing of long non-coding RNA ANRIL inhibits the development of multidrug resistance in gastric cancer cells. Oncol. Rep. 36: 263-270.
6. Kikuchi, A., et al. 2017. ASP5878, a selective FGFR inhibitor, to treat FGFR3-dependent urothelial cancer with or without chemoresistance. Cancer Sci. 108: 236-242.
7. Lin, J.Z., et al. 2018. Efficacy of gefitinib-celecoxib combination therapy in docetaxel-resistant prostate cancer. Oncol. Rep. 40: 2242-2250.
8. Hwang, S.H., et al. 2019. Glucose starvation induces resistance to metformin through the elevation of mitochondrial multidrug resistance protein 1. Cancer Sci. 110: 1256-1267.
9. Fultang, N., et al. 2020. ROR1 regulates chemoresistance in breast cancer via modulation of drug efflux pump ABCB1. Sci. Rep. 10: 1821.

RESEARCH USE

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