SANTA CRUZ BIOTECHNOLOGY, INC.

LRP (1014): sc-23916

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Tumor cells that are insensitive to anticancer drugs often have a multidrug-resistant (MDR) phenotype. Proteins associated with this phenomenon are transport-associated proteins such as P-glycoprotein, multidrug resistance protein 1, lung resistance-related protein (LRP) and breast cancer resistance protein (BCRP). The LRP protein, which is identified as the major vault protein (MVP), is overexpressed in various multidrug-resistant cancer cell lines and clinical samples. The promoter of LRP is TATA-less; contains an inverted CCAAT-box and a Sp1 site located near a p53 binding motif. LRP has two alternative splice variants, which differ from each other within the 5'-leader. The long-LRP isoform is ubiquitously expressed and represents an almost constant portion of the total LRP mRNA in many different normal tissues. LRP is the major component of the multimeric ribonucleoprotein complexes, with several copies of an untranslated RNA, which has been shown to transport along cytoskeletal-based cellular tracks. In conclusion, LRP protein mediates drug resistance, perhaps via a transport process.

CHROMOSOMAL INFORMATION

Genetic locus: MVP (human) mapping to 16p11.2; Mvp (mouse) mapping to 7 F3.

SOURCE

LRP (1014) is a mouse monoclonal antibody raised against LRP purified from MCF7 cells.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

LRP (1014) is available conjugated to agarose (sc-23916 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-23916 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23916 PE), fluorescein (sc-23916 FITC), Alexa Fluor® 488 (sc-23916 AF488), Alexa Fluor® 546 (sc-23916 AF546), Alexa Fluor® 594 (sc-23916 AF594) or Alexa Fluor® 647 (sc-23916 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-23916 AF680) or Alexa Fluor® 790 (sc-23916 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

LRP (1014) is recommended for detection of LRP of mouse, rat and 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

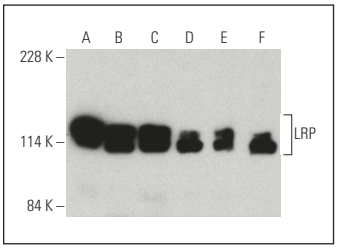
Suitable for use as control antibody for LRP siRNA (h): sc-35824, LRP siRNA (m): sc-35825, LRP shRNA Plasmid (h): sc-35824-SH, LRP shRNA Plasmid (m): sc-35825-SH, LRP shRNA (h) Lentiviral Particles: sc-35824-V and LRP shRNA (m) Lentiviral Particles: sc-35825-V.

Molecular Weight of LRP: 110 kDa.

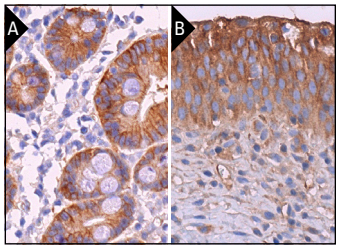
STORAGE

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

DATA



LRP (1014) HRP: sc-23916 HRP. Direct western blot analysis of LRP expression in U-87 MG (**A**), A549 (**B**), Caki-1 (**C**), SK-BR-3 (**D**), MCF7 (**E**) and HeLa (**F**) whole cell lysates.



LRP (1014): sc-23916. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic staining of urothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Obata, H., et al. 2006. Association between single nucleotide polymorphisms of drug resistance-associated genes and response to chemotherapy in advanced ovarian cancer. Anticancer Res. 26: 2227-2232.
2. Sun, H., et al. 2020. LncRNA KCNQ1OT1 contributes to the progression and chemoresistance in acute myeloid leukemia by modulating Tspan3 through suppressing miR-193a-3p. Life Sci. 241: 117161.
3. Kliza, K.W., et al. 2021. Reading ADP-ribosylation signaling using chemical biology and interaction proteomics. Mol. Cell 81: 4552-4567.e8.
4. Qi, Y., et al. 2022. Major vault protein attenuates cardiomyocyte injury in doxorubicin-induced cardiomyopathy through activating Akt. BMC Cardiovasc. Disord. 22: 77.
5. Liu, Q., et al. 2022. Major vault protein prevents atherosclerotic plaque destabilization by suppressing macrophage ASK1-JNK signaling. Arterioscler. Thromb. Vasc. Biol. 42: 580-596.
6. Kurusu, R., et al. 2023. Integrated proteomics identifies p62-dependent selective autophagy of the supramolecular vault complex. Dev. Cell 58: 1189-1205.e11.
7. Wang, R., et al. 2023. Major vault protein (MVP) suppresses aging- and estrogen deficiency-related bone loss through Fas-mediated apoptosis in osteoclasts. Cell Death Dis. 14: 604.
8. Yu, C., et al. 2023. Major vault protein regulates tumor-associated macrophage polarization through interaction with signal transducer and activator of transcription 6. Front. Immunol. 14: 1289795.
9. Xia, J., et al. 2024. MVP enhances FGF21-induced ferroptosis in hepatocellular carcinoma by increasing lipid peroxidation through regulation of NOX4. Clin. Transl. Sci. 17: e13910.

RESEARCH USE

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