

LRP (E-2): sc-390134

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.

REFERENCES

1. Scheffer, G.L., et al. 1995. The drug resistance-related protein LRP is the human major vault protein. *Nat. Med.* 1: 578-582.
2. Herrmann, C., et al. 1999. Recombinant major vault protein is targeted to neuritic tips of PC12 cells. *J. Cell Biol.* 144: 1163-1172.
3. Scheffer, G.L., et al. 2000. Lung resistance-related protein/major vault protein and vaults in multidrug-resistant cancer. *Curr. Opin. Oncol.* 12: 550-556.

CHROMOSOMAL LOCATION

Genetic locus: MVP (human) mapping to 16p11.2.

SOURCE

LRP (E-2) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of LRP of human origin.

PRODUCT

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

APPLICATIONS

LRP (E-2) is recommended for detection of LRP of human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

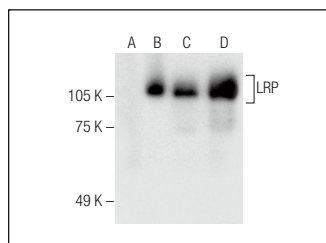
Molecular Weight of LRP: 110 kDa.

Positive Controls: LRP (h): 293T Lysate: sc-170301, U-87 MG cell lysate: sc-2411 or HeLa whole cell lysate: sc-2200.

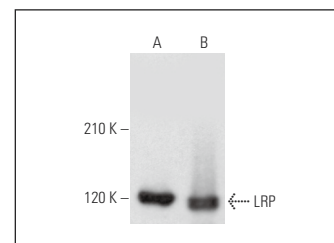
RECOMMENDED SUPPORT REAGENTS

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.

DATA



LRP (E-2): sc-390134. Western blot analysis of LRP expression in non-transfected 293T: sc-117752 (A), human LRP transfected 293T: sc-170301 (B), HeLa (C) and U-87 MG (D) whole cell lysates.



LRP (E-2): sc-390134. Western blot analysis of LRP expression in SK-BR-3 (A) and T98G (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhao, W., et al. 2015. The role and mechanism of WEE1 on the cisplatin resistance reversal of the Hep G2/DDP human hepatic cancer cell line. *Oncol. Lett.* 10: 3081-3086.
2. Vargová, J., et al. 2018. Hypericin affects cancer side populations via competitive inhibition of BCRP. *Biomed. Pharmacother.* 99: 511-522.
3. Xiao, Y.S., et al. 2019. Major vault protein is a direct target of Notch1 signaling and contributes to chemoresistance in triple-negative breast cancer cells. *Cancer Lett.* 440-441: 156-167.
4. Jin, C., et al. 2019. The CK2 inhibitor CX4945 reverses cisplatin resistance in the A549/DDP human lung adenocarcinoma cell line. *Oncol. Lett.* 18: 3845-3856.
5. Yu, X., et al. 2021. CD73 induces gemcitabine resistance in pancreatic ductal adenocarcinoma: a promising target with non-canonical mechanisms. *Cancer Lett.* 519: 289-303.

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.