

LIV-1 (E-20): sc-84875

BACKGROUND

LIV-1 (estrogen-regulated protein), also known as ZIP6 (zinc transporter), Zrt and Irt-like protein 6 or, in mouse and rat, SLC39A6 (solute carrier family 39 member 6), is expressed as two isoforms. LIV-1 is a multi-pass cell membrane protein that is 749 amino acids in length and is expressed abundantly in breast, prostate, placenta, kidney, pituitary and corpus callosum, as well as in cells derived from various types of cancers affecting the glands, cervix and lungs. LIV-1 is a member of the ZIP transporter protein family which consists of 14 members that transport zinc. LIV-1 transports zinc from its position on the plasma membrane into the cytosol of the cell and contains a histidine-rich transmembrane domain which is thought to bind zinc and aid in its transportation. LIV-1 is thought to be important for zinc uptake in neuroblastoma cells and may also be crucial for maintaining zinc homeostasis, a process which aids in the prevention of cancer and disease. Activated estrogen receptors are thought to regulate LIV-1 expression at the level of transcription, via the mRNA precursor to LIV-1 which associates with estrogen receptors that are activated by growth factors and estradiol. LIV-1 is upregulated in hormone-rich tissue, including breast and cervical cancer, where it is thought to affect cell motility and may play an important role in tumor development and metastasis. Conversely, less aggressive tumors may contain high levels of LIV-1 that could lead to apoptosis, indicating a dual role for LIV-1 in tumor suppression.

REFERENCES

1. El-Tanani, M.K., et al. 1997. Interaction between estradiol and growth factors in the regulation of specific gene expression in MCF-7 human breast cancer cells. *J. Steroid Biochem. Mol. Biol.* 60: 269-276.
2. Taylor, K.M. 2000. LIV-1 breast cancer protein belongs to new family of histidine-rich membrane proteins with potential to control intracellular Zn²⁺ homeostasis. *IUBMB Life* 49: 249-253.
3. Taylor, K.M., et al. 2005. Structure-function analysis of a novel member of the LIV-1 subfamily of zinc transporters, ZIP14. *FEBS Lett.* 579: 427-432.
4. Kasper, G., et al. 2005. Expression levels of the putative zinc transporter LIV-1 are associated with a better outcome of breast cancer patients. *Int. J. Cancer* 117: 961-973.

CHROMOSOMAL LOCATION

Genetic locus: SLC39A6 (human) mapping to 18q12.2; Slc39a6 (mouse) mapping to 18 A2.

SOURCE

LIV-1 (E-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of LIV-1 of human 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-84875 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

LIV-1 (E-20) is recommended for detection of LIV-1 of human origin and SLC39A6 of mouse and rat 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

LIV-1 (E-20) is also recommended for detection of LIV-1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for LIV-1 siRNA (h): sc-75427, SLC39A6 siRNA (m): sc-153558, LIV-1 shRNA Plasmid (h): sc-75427-SH, SLC39A6 shRNA Plasmid (m): sc-153558-SH, LIV-1 shRNA (h) Lentiviral Particles: sc-75427-V and SLC39A6 shRNA (m) Lentiviral Particles: sc-153558-V.

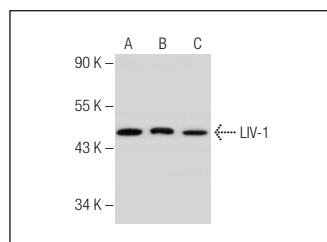
Molecular Weight of LIV-1 isoforms: 85/49 kDa.

Positive Controls: LNCaP cell lysate: sc-2231, A-375 cell lysate: sc-3811 or human prostate tissue extract.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



LIV-1 (E-20): sc-84875. Western blot analysis of LIV-1 expression in LNCaP (A) and A-375 (B) whole cell lysates and human prostate tissue extract (C).

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.