SANTA CRUZ BIOTECHNOLOGY, INC.

ZIP1 (G-12): sc-103944

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The Power to Question

BACKGROUND

Zinc is an essential cofactor that is involved in cell growth and development, as well as in protein, nucleic acid and lipid metabolism. The transport of zinc across the cell membrane is crucial for correct enzyme and overall cell function. ZIP1, also known as SLC39A1 (solute carrier family 39 (zinc transporter), member 1), IRT1 or ZIRTL, is a 324 amino acid multi-pass membrane protein that localizes to both the cell membrane and the endoplasmic reticulum and belongs to the ZIP transporter family. Expressed ubiquitously in adult and fetal tissue, ZIP1 functions as a major endogenous zinc uptake transporter, effectively mediating the transport of zinc across the cell membrane. ZIP1, whose activity is inhibited by Ni^{2+}, may play an important role in zinc uptake within prostate cells, possibly effecting the development of prostate cancer.

REFERENCES

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3. Franklin, R.B., et al. 2005. hZIP1 zinc uptake transporter downregulation and zinc depletion in prostate cancer. Mol. Cancer 4: 32.
4. Tang, Z., et al. 2006. Overexpression of the ZIP1 zinc transporter induces an osteogenic phenotype in mesenchymal stem cells. Bone 38: 181-198.
5. Huang, L. and Kirschke, C.P. 2007. A dileucine sorting signal in ZIP1 (SLC39A1) mediates endocytosis of the protein. FEBS J. 274: 3986-3997.
6. Golovine, K., et al. 2008. Overexpression of the zinc uptake transporter hZIP1 inhibits nuclear factor-κB and reduces the malignant potential of prostate cancer cells *in vitro* and *in vivo*. Clin. Cancer Res. 14: 5376-5384.
7. Kahmann, L., et al. 2008. Zinc supplementation in the elderly reduces spontaneous inflammatory cytokine release and restores T cell functions. Rejuvenation Res. 11: 227-237.
8. Makhov, P., et al. 2009. Transcriptional regulation of the major zinc uptake protein hZIP1 in prostate cancer cells. Gene 431: 39-46.
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CHROMOSOMAL LOCATION

Genetic locus: SLC39A1 (human) mapping to 1q21.3; Slc39a1 (mouse) mapping to 3 F1.

SOURCE

ZIP1 (G-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of ZIP1 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-103944 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ZIP1 (G-12) is recommended for detection of ZIP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

ZIP1 (G-12) is also recommended for detection of ZIP1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for ZIP1 siRNA (h): sc-88210, ZIP1 siRNA (m): sc-155977, ZIP1 shRNA Plasmid (h): sc-88210-SH, ZIP1 shRNA Plasmid (m): sc-155977-SH, ZIP1 shRNA (h) Lentiviral Particles: sc-88210-V and ZIP1 shRNA (m) Lentiviral Particles: sc-155977-V.

Molecular Weight of ZIP1: 34 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or HCT-116 whole cell lysate: sc-364175.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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