

ZnT-7 (S-12): sc-160946

BACKGROUND

Zinc, an essential element required for cell proliferation and differentiation, plays a role in a diverse array of cellular functions (such as neuroregulation) and acts as a cofactor for numerous enzymes and transcription factors. The zinc transporter (ZnT) family regulates the supply of zinc within cells, and its members commonly contain six membrane-spanning domains, a large histidine-rich intracellular loop and a C-terminal tail. ZnT-7 (Zinc transporter 7), also known as SLC30A7 (Solute carrier family 30 member 7), is a 376 amino acid protein that localizes to the membrane of the *trans*-Golgi network. Expressed as a homooligomer, ZnT-7 is believed to facilitate zinc transport from the cytoplasm into the Golgi apparatus and is required with ZNT-5 for the activation of zinc-requiring alkaline phosphatases. ZnT-7 is upregulated in response to zinc depletion.

REFERENCES

- Helston, R.M., Phillips, S.R., McKay, J.A., Jackson, K.A., Mathers, J.C. and Ford, D. 2007. Zinc transporters in the mouse placenta show a coordinated regulatory response to changes in dietary zinc intake. *Placenta* 28: 437-444.
- Gao, H.L., Xu, H., Wang, X., Dahlstrom, A., Huang, L. and Wang, Z.Y. 2008. Expression of zinc transporter ZnT-7 in mouse superior cervical ganglion. *Auton Neurosci.* 140: 59-65.
- Kirschke, C.P. and Huang, L. 2008. Expression of the ZnT (SLC30) family members in the epithelium of the mouse prostate during sexual maturation. *J. Mol. Histol.* 39: 359-370.
- Chi, Z.H., Feng, W.Y., Gao, H.L., Zheng, W., Huang, L. and Wang, Z.Y. 2009. ZnT-7 and Zn²⁺ are present in different cell populations in the mouse testis. *Histol. Histopathol.* 24: 25-30.
- Gao, H.L., Feng, W.Y., Li, X.L., Xu, H., Huang, L. and Wang, Z.Y. 2009. Golgi apparatus localization of ZnT-7 in the mouse cerebellum. *Histol. Histopathol.* 24: 567-572.
- Fukunaka, A., Suzuki, T., Kurokawa, Y., Yamazaki, T., Fujiwara, N., Ishihara, K., Migaki, H., Okumura, K., Masuda, S., Yamaguchi-Iwai, Y., Nagao, M. and Kambe, T. 2009. Demonstration and characterization of the heterodimerization of ZnT-5 and ZnT-6 in the early secretory pathway. *J. Biol. Chem.* 284: 30798-30806.
- Jou, M.Y., Hall, A.G., Philipps, A.F., Kelleher, S.L. and Lönnerdal, B. 2009. Tissue-specific alterations in zinc transporter expression in intestine and liver reflect a threshold for homeostatic compensation during dietary zinc deficiency in weanling rats. *J. Nutr.* 139: 835-841.
- Wang, X. and Zhou, B. 2010. Dietary zinc absorption: a play of zips and ZnTs in the gut. *IUBMB Life* 62: 176-182.

CHROMOSOMAL LOCATION

Genetic locus: SLC30A7 (human) mapping to 1p21.2; Slc30a7 (mouse) mapping to 3 G1.

RESEARCH USE

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

SOURCE

ZnT-7 (S-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of ZnT-7 of human origin.

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-160946 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ZnT-7 (S-12) is recommended for detection of ZnT-7 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); non cross-reactive with other ZnT family members.

ZnT-7 (S-12) is also recommended for detection of ZnT-7 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ZnT-7 siRNA (h): sc-88064, ZnT-7 siRNA (m): sc-155822, ZnT-7 shRNA Plasmid (h): sc-88064-SH, ZnT-7 shRNA Plasmid (m): sc-155822-SH, ZnT-7 shRNA (h) Lentiviral Particles: sc-88064-V and ZnT-7 shRNA (m) Lentiviral Particles: sc-155822-V.

Molecular Weight of ZnT-7: 42 kDa.

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.

STORAGE

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

PROTOCOLS

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