SANTA CRUZ BIOTECHNOLOGY, INC.

# ZnT-9 siRNA (h): sc-77015

## BACKGROUND

Zinc, an essential element required for cell proliferation and differentiation, plays a role in a diverse array of cellular functions, including acting as a cofactor for numerous enzymes and transcription factors and as a neuroregulator. The zinc transporter (ZnT) or solute carrier 30(SLC30) family regulates the supply of zinc within cells, and its members are characterized by containing six membrane-spanning domains, a large histidine-rich intracellular loop, and a C-terminal tail. ZnT proteins also belong to the cation diffusion facilitator (CDF) transporter family of metal ion transporters. ZnT-9, also known as HUEL (human embryonic lung protein), GAC63 (GRIP1-associated coactivator 1) or SLC30 member 9, displays ubiquitous expression in fetal and adult tissues as well as cancer cell lines. ZnT-9 localizes to the cytoplasm and is translocated to the nucleus during S phase. ZnT-9 has the lowest homology with the other zinc transporters and may function as a DNA-binding protein.

## REFERENCES


1. Palmiter, R.D., et al. 2004. Efflux and compartmentalization of zinc by members of the SLC30 family of solute carriers. Pflugers Arch. 447: 744-751.
2. Seve, M., et al. 2004. In silico identification and expression of SLC30 family genes: an expressed sequence tag data mining strategy for the characterization of zinc transporters' tissue expression. BMC Genomics 5: 32-32.
3. González-Guerrero, M., et al. 2005. Characterization of a Glomus intraradices gene encoding a putative Zn transporter of the cation diffusion facilitator family. Fungal Genet. Biol. 42: 130-140.
4. Chimienti, F., et al. 2005. ZnT-8, a pancreatic β-cell-specific zinc transporter. Biometals 18: 313-317.
5. Kambe, T., et al. 2006. Sequence similarity and functional relationship among eukaryotic ZIP and CDF transporters. Genomics Proteomics Bioinformatics 4: 1-9.
6. Falcón-Perez, J.M., et al. 2007. Zinc transporter 2 (SLC30A2) can suppress the vesicular zinc defect of adaptor protein 3-depleted fibroblasts by promoting zinc accumulation in lysosomes. Exp. Cell Res. 313: 1473-1483.


## CHROMOSOMAL LOCATION

Genetic locus: SLC30A9 (human) mapping to 4p13.

## PRODUCT

ZnT-9 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZnT-9 shRNA Plasmid (h): sc-77015-SH and ZnT-9 shRNA (h) Lentiviral Particles: sc-77015-V as alternate gene silencing products.

For independent verification of ZnT-9 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-77015A, sc-77015B and sc-77015C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

ZnT-9 siRNA (h) is recommended for the inhibition of ZnT-9 expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## GENE EXPRESSION MONITORING

ZnT-9 (C-3): sc-271956 is recommended as a control antibody for monitoring of ZnT-9 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ZnT-9 gene expression knockdown using RT-PCR Primer: ZnT-9 (h)-PR: sc-77015-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## RESEARCH USE

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

## PROTOCOLS

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