

ZnT-8 (B-9): sc-514715



The Power to Question

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-8 (zinc transporter 8), also known as SLC30A8 (solute carrier family 30 member 8), is a 369 amino acid multi-pass membrane protein that belongs to the ZnT family and is a major autoantigen in type I diabetes. Expressed specifically in pancreas islet cells, ZnT-8 functions as a zinc-efflux transporter that facilitates the accumulation of zinc in intracellular vesicles and is essential for the zinc-dependent maturation of Insulin within pancreatic cells. Multiple isoforms of ZnT-8 exist due to alternative splicing events.

REFERENCES

- 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.
- Chimienti, F., et al. 2004. Identification and cloning of a β -cell-specific zinc transporter, ZnT-8, localized into Insulin secretory granules. *Diabetes* 53: 2330-2337.
- Chimienti, F., et al. 2005. ZnT-8, a pancreatic β -cell-specific zinc transporter. *Biometals* 18: 313-317.
- Borowiec, M., et al. 2007. Mutations in the SLC30A8 gene are not a major cause of MODY or other forms of early-onset, autosomal dominant type 2 diabetes. *Diabetologia* 50: 2224-2226.

CHROMOSOMAL LOCATION

Genetic locus: SLC30A8 (human) mapping to 8q24.11; Slc30a8 (mouse) mapping to 15 C.

SOURCE

ZnT-8 (B-9) is a mouse monoclonal antibody raised against amino acids 1-79 mapping at the N-terminus of ZnT-8 of mouse origin.

PRODUCT

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

ZnT-8 (B-9) is available conjugated to agarose (sc-514715 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514715 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514715 PE), fluorescein (sc-514715 FITC), Alexa Fluor® 488 (sc-514715 AF488), Alexa Fluor® 546 (sc-514715 AF546), Alexa Fluor® 594 (sc-514715 AF594) or Alexa Fluor® 647 (sc-514715 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514715 AF680) or Alexa Fluor® 790 (sc-514715 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

ZnT-8 (B-9) is recommended for detection of ZnT-8 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 ZnT-8 siRNA (h): sc-77630, ZnT-8 siRNA (m): sc-155823, ZnT-8 shRNA Plasmid (h): sc-77630-SH, ZnT-8 shRNA Plasmid (m): sc-155823-SH, ZnT-8 shRNA (h) Lentiviral Particles: sc-77630-V and ZnT-8 shRNA (m) Lentiviral Particles: sc-155823-V.

Molecular Weight of ZnT-8: 41 kDa.

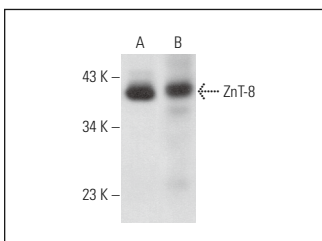
Positive Controls: MIA PaCa-2 cell lysate: sc-2285 or RPE-J cell lysate: sc-24771.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

- Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.
- Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).
- Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



ZnT-8 (B-9): sc-514715. Western blot analysis of ZnT-8 expression in MIA PaCa-2 (A) and RPE-J (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Naderi, R., et al. 2020. Tropisetron improves pancreas function and increases Insulin synthesis and secretion in the STZ-induced diabetic rats: involvement of UCP2/ZnT8 pathway. *J. Pharm. Pharmacol.* 72: 1082-1091.

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.