

Zinc transporter

- A zinc transporter drives glioblastoma progression via extracellular vesicles-reprogrammed microglial plasticity
- Zinc Homeostasis Plays Important Roles in Hypoxia Tolerance: A Study Conducted Clinically and *In Vitro*
- Clinical study of autoantibodies in type 1 diabetes mellitus children with ketoacidosis or microalbuminuria
- Zinc-Dependent Regulation of ZEB1 and YAP1 Coactivation Promotes Epithelial-Mesenchymal Transition Plasticity and Metastasis in Pancreatic Cancer
- ZnT8 in T2D: a novel therapeutic target for maintaining insulin secretion capacity
- Conformation and Domain Movement Analysis of Human Matrix Metalloproteinase-2: Role of Associated Zn^{2+} and Ca^{2+} Ions
- A conserved CCM complex promotes apoptosis non-autonomously by regulating zinc homeostasis
- ZIP4 Promotes Muscle Wasting and Cachexia in Mice With Orthotopic Pancreatic Tumors by Stimulating RAB27B-Regulated Release of Extracellular Vesicles From Cancer Cells

Zinc transporters are membrane proteins that regulate the movement of Zn^{2+} ions across cellular membranes. They are essential for zinc homeostasis and are involved in numerous physiological processes.

Families

There are two main families of zinc transporters:

1. ZIP (Zrt-, Irt-like Protein) Family – SLC39A family Function: Increase intracellular zinc by importing it into the cytosol from either outside the cell or from intracellular stores.

Examples: ZIP1, ZIP4, ZIP8, etc.

Clinical relevance:

ZIP4 mutations cause acrodermatitis enteropathica, a rare genetic disorder characterized by zinc deficiency.

2. ZnT (Zinc Transporter) Family – SLC30A family Function: Decrease cytosolic zinc by exporting it out of the cytosol to the extracellular space or into organelles (e.g., Golgi, endosomes).

Examples: ZnT1, ZnT3, ZnT5, ZnT8, etc.

Clinical relevance:

ZnT8 is associated with type 1 and type 2 diabetes – autoantibodies against ZnT8 are biomarkers in type 1 diabetes.

Why They Matter Zinc imbalance is linked to neurodegeneration, cancer, immune dysfunction, and metabolic diseases.

Zinc transporters are being studied as potential therapeutic targets and biomarkers.

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