

Matriptase-2 (h4): 293T Lysate: sc-114572

BACKGROUND

Matriptase-2 (MT2; TMPRSS6; transmembrane serine protease 6; MT2; IRIDA) is a cell surface type II transmembrane (membrane-anchored extracellular C-terminus and cytoplasmic N-terminus) serine proteinase/protease, that contributes to liver matrix remodeling, regulation of hepatic (hormone) hepcidin expression, and systemic iron homeostasis. TMPRSS6 transcribes into several alternative splicing/mRNA variants, and translates as a zymogen (proenzyme), that undergoes auto-cleavage for activation. Human germline mutations in TMPRSS6 contribute to (oral treatment naive) phenotypic iron deficiency (iron-refractory iron deficiency anemia (IRIDA)). Matriptase-2 interacts with transferrin receptor 1 (TfR1). TMPRSS6 (Matriptase-2) indicates higher expression levels in K-Ras G12C type lung adenocarcinoma in comparison to normal tissue. TMPRSS6 polymorphisms associate with developing IRIDA. Matriptase-2 (MT-2) suppresses prostate cancer cell migration through feature modulation of epithelial-to-mesenchymal transition (EMT).

REFERENCES

1. Finberg, K.E., et al. 2008. Mutations in TMPRSS6 cause iron-refractory iron deficiency anemia (IRIDA). *Nat. Genet.* 40: 569-571.
2. Enns, C.A., et al. 2020. The ectodomain of Matriptase-2 plays an important nonproteolytic role in suppressing hepcidin expression in mice. *Blood* 136: 989-1001.
3. Alcaraz-Sanabria, A., et al. 2022. Transcriptomic mapping of non-small cell lung cancer K-RAS p.G12C mutated tumors: identification of surfaceome targets and immunologic correlates. *Front. Immunol.* 12: 786069.
4. Dion, S.P., et al. 2022. Functionally impaired isoforms regulate TMPRSS6 proteolytic activity. *PLoS ONE* 17: e0273825.
5. Lin, H.Y., et al. 2022. Matriptase-2/NR4A3 axis switches TGF- β action toward suppression of prostate cancer cell invasion, tumor growth, and metastasis. *Oncogene* 41: 2833-2845.
6. Duca, L., et al. 2022. Associated effect of SLC40A1 and TMPRSS6 polymorphisms on iron overload. *Metabolites* 12: 919.

CHROMOSOMAL LOCATION

Genetic locus: TMPRSS6 (human) mapping to 22q12.3.

PRODUCT

Matriptase-2 (h4): 293T Lysate represents a lysate of human Matriptase-2 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

Matriptase-2 (h4): 293T Lysate is suitable as a Western Blotting positive control for human reactive Matriptase-2 antibodies. Recommended use: 10-20 μ l per lane.

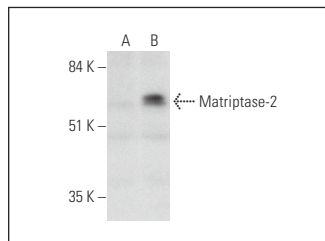
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Matriptase-2 (H-1): sc-514973 is recommended as a positive control antibody for Western Blot analysis of enhanced human Matriptase-2 expression in Matriptase-2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) 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.

DATA



Matriptase-2 (H-1): sc-514973. Western blot analysis of Matriptase-2 expression in non-transfected: sc-117752 (A) and human Matriptase-2 transfected: sc-114572 (B) 293T whole cell lysates.

RESEARCH USE

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