

# Matriptase-2 (H-1): sc-514973

## 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- $\beta$  action toward suppression of prostate cancer cell invasion, tumor growth, and metastasis. *Oncogene* 41: 2833-2845.

## CHROMOSOMAL LOCATION

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

## SOURCE

Matriptase-2 (H-1) is a mouse monoclonal antibody raised against amino acids 65-364 mapping within an internal region of Matriptase-2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Matriptase-2 (H-1) is available conjugated to agarose (sc-514973 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514973 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514973 PE), fluorescein (sc-514973 FITC), Alexa Fluor<sup>®</sup> 488 (sc-514973 AF488), Alexa Fluor<sup>®</sup> 546 (sc-514973 AF546), Alexa Fluor<sup>®</sup> 594 (sc-514973 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-514973 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-514973 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-514973 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Matriptase-2 (H-1) is recommended for detection of Matriptase-2 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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 Matriptase-2 siRNA (h): sc-106207, Matriptase-2 shRNA Plasmid (h): sc-106207-SH and Matriptase-2 shRNA (h) Lentiviral Particles: sc-106207-V.

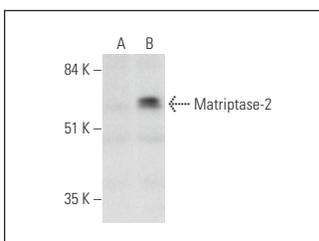
Molecular Weight of Matriptase-2: 70 kDa.

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

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## 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.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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