

HAI-1 (H-1): sc-137159

BACKGROUND

Tissue damage, such as hepatic and renal injury, initiates hepatocyte growth factor activator (HGFAC)-mediated limited proteolytic activation of the inactive single-chain precursor form of HGF. Initially, HGFAC is produced as a precursor protein, which is activated by limited proteolysis and is neutralized by specific inhibitors known as HGF activator inhibitors, designated HAIs. HAIs belong to the Kunitz-type serine protease inhibitor family. HAIs target HGF activator and are involved in the regulation of proteolytic activation of HGF in injured tissues. Human HAI-1 transcript is expressed in various human tissues, such as adult placenta, kidney, pancreas, prostate and small intestine, and fetal kidney and lung. It translates into a 478 amino acid protein. The human HAI-2 gene maps to chromosome 19q13.1 and encodes a 252 amino acid protein, also designated human placental bikunin or kop (Kunitz domain containing protein over-expressed in pancreatic cancer). HAI-1 and HAI-2 are produced in membrane-associated forms, which are secreted as active, proteolytically truncated proteins.

REFERENCES

1. Shimomura, T., et al. 1997. Hepatocyte growth factor activator inhibitor, a novel Kunitz-type serine protease inhibitor. *J. Biol. Chem.* 272: 6370-6376.
2. Marlor, C.W., et al. 1997. Identification and cloning of human placental bikunin, a novel serine protease inhibitor containing two Kunitz domains. *J. Biol. Chem.* 272: 12202-12208.
3. Kawaguchi, T., et al. 1997. Purification and cloning of hepatocyte growth factor activator inhibitor type 2, a Kunitz-type serine protease inhibitor. *J. Biol. Chem.* 272: 27558-27564.
4. Muller-Pillasch, F., et al. 1998. Cloning of a new Kunitz-type protease inhibitor with a putative transmembrane domain overexpressed in pancreatic cancer. *Biochim. Biophys. Acta* 1395: 88-95.

CHROMOSOMAL LOCATION

Genetic locus: SPINT1 (human) mapping to 15q15.1; Spint1 (mouse) mapping to 2 E5.

SOURCE

HAI-1 (H-1) is a mouse monoclonal antibody raised against amino acids 36-215 mapping near the N-terminus of HAI-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HAI-1 (H-1) is available conjugated to agarose (sc-137159 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137159 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137159 PE), fluorescein (sc-137159 FITC), Alexa Fluor® 488 (sc-137159 AF488), Alexa Fluor® 546 (sc-137159 AF546), Alexa Fluor® 594 (sc-137159 AF594) or Alexa Fluor® 647 (sc-137159 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137159 AF680) or Alexa Fluor® 790 (sc-137159 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

HAI-1 (H-1) is recommended for detection of HAI-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

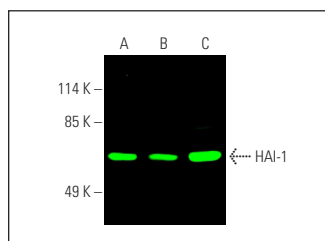
Suitable for use as control antibody for HAI-1 siRNA (h): sc-39554, HAI-1 siRNA (m): sc-39555, HAI-1 shRNA Plasmid (h): sc-39554-SH, HAI-1 shRNA Plasmid (m): sc-39555-SH, HAI-1 shRNA (h) Lentiviral Particles: sc-39554-V and HAI-1 shRNA (m) Lentiviral Particles: sc-39555-V.

Molecular Weight of HAI-1 precursor: 58 kDa.

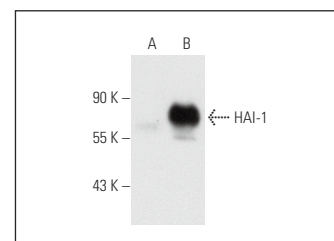
Molecular Weight of truncated HAI-1: 40 kDa.

Positive Controls: 3T3-L1 cell lysate: sc-2243, NIH/3T3 whole cell lysate: sc-2210 or HAI-1 (h3): 293T Lysate: sc-159178.

DATA



HAI-1 (H-1): sc-137159. Near-infrared western blot analysis of HAI-1 expression in NIH/3T3 (A), 3T3-L1 (B) and RAW 264.7 (C) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



HAI-1 (H-1): sc-137159. Western blot analysis of HAI-1 expression in non-transfected: sc-117752 (A) and human HAI-1 transfected: sc-159178 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Sechler, M., et al. 2015. Novel role for γ-catenin in the regulation of cancer cell migration via the induction of hepatocyte growth factor activator inhibitor type 1 (HAI-1). *J. Biol. Chem.* 290: 15610-15620.
2. Liu, X., et al. 2017. Down-regulation of PDK4 is critical for the switch of carbohydrate catabolism during syncytialization of human placental trophoblasts. *Sci. Rep.* 7: 8474.
3. Liu, C.L., et al. 2018. Expression of serine peptidase inhibitor Kunitz type 1 in differentiated thyroid cancer. *Histochem. Cell Biol.* 149: 635-644.
4. Kozai, A., et al. 2024. Immunohistochemical localization of HCA1 receptor in placenta in presence of fetal growth restriction. *Placenta* 154: 80-87.

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.