

HPA1 (4D7): sc-293205

BACKGROUND

Heparanases (HPA) degrade heparan sulfate side chains of heparan sulfate proteoglycans (HSPGs) in the extracellular matrix and play an important role in the extravasation of blood-borne tumor cells and inflammatory leukocytes. HPA1 dismantles the subendothelial basal membrane and facilitates the metastasis of blood-borne tumor cells. Furthermore, HPA1 induces angiogenesis and likely promotes the vascularization of tumors. Upon degradation, HPAs free growth factors and cytokines that stimulate cell proliferation and chemotaxis. Fibroblasts endocytose extracellular HPA1 for cytoplasmic accumulation *in vitro*. Proteolytic processing at the cell surface of a precursor begets an active form of HPA1. The gene encoding human HPA1 maps to chromosome 4q21.23.

REFERENCES

1. Vlodavsky, I., et al. 1983. Lymphoma cell mediated degradation of sulfated proteoglycans in the subendothelial extracellular matrix: relationship to tumor cell metastasis. *Cancer Res.* 43: 2704-2711.
2. Bashkin, P., et al. 1989. Basic fibroblast growth factor binds to subendothelial extracellular matrix and is released by heparitinase and heparin-like molecules. *Biochemistry* 28: 1737-1743.
3. Vlodavsky, I., et al. 1990. Extracellular matrix-resident growth factors and enzyme: Possible involvement in tumor metastasis and angiogenesis. *Cancer Metastasis Rev.* 9: 203-226.
4. Vlodavsky, I., et al. 1992. Expression of heparanase by platelets and circulating cells of the immune system: possible involvement in diapedesis and extravasation. *Invasion Metastasis* 12: 112-127.
5. Baker, E., et al. 1999. Human HPA endoglycosidase heparanase. Map position 4q21.3. *Chromosome Res.* 7: 319.
6. Dempsey, L.A., et al. 2000. Heparanase, a potential regulator of cell-matrix interactions. *Trends Biochem. Sci.* 25: 349-351.
7. Vlodavsky, I., et al. 2001. Properties and function of heparanase in cancer metastasis and angiogenesis. *Haemostasis* 31: 60-63.
8. Nadav, L., et al. 2002. Activation, processing and trafficking of extracellular heparanase by primary human fibroblasts. *J. Cell Sci.* 115: 2179-2187.

CHROMOSOMAL LOCATION

Genetic locus: HPSE (human) mapping to 4q21.23.

SOURCE

HPA1 (4D7) is a mouse monoclonal antibody raised against a partial recombinant protein representing amino acids 72-170 of HPA1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HPA1 (4D7) is recommended for detection of HPA1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HPA1 siRNA (h): sc-40685, HPA1 shRNA Plasmid (h): sc-40685-SH and HPA1 shRNA (h) Lentiviral Particles: sc-40685-V.

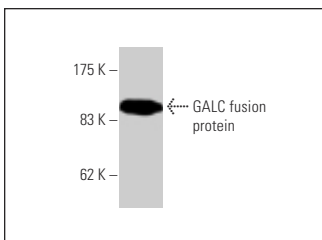
Molecular Weight of HPA1 latent precursor: 65 kDa.

Molecular Weight of proteolytically processed highly active HPA1: 50 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



GALC (2D1): sc-293200. Western blot analysis of human recombinant GALC fusion protein.

SELECT PRODUCT CITATIONS

1. Agelidis, A.M., et al. 2017. Viral activation of heparanase drives pathogenesis of herpes simplex virus-1. *Cell Rep.* 20: 439-450.

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 for detailed protocols and support products.