

# Sulf-1 (H-81): sc-98325

## BACKGROUND

Sulf-1 (sulfatase 1), also known as HSULF-1, is an 871 amino acid protein that localizes to both the endoplasmic reticulum and the Golgi apparatus and belongs to the sulfatase family. Members of the sulfatase family each contain a conserved active site with a posttranslationally generated  $\alpha$ -formylglycine that is essential for their catalytic activity. These enzymes are responsible for the hydrolysis of sulfate ester bonds. Sulf-1 and Sulf-2 (sulfatase 2) specifically interact with heparin sulfate proteoglycans (HSPGs) and hydrolyze glucosamine-6-sulfate modifications, thus regulating the interactions of HSPGs with a variety of signaling molecules. As key components of cell surfaces and extracellular matrices, HSPGs modulate growth factor activities and thereby influence cell growth and differentiation. Additionally, HSPGs play a critical role in regulating tumor cell metastasis by mediating cell adhesion and the activities of growth and angiogenic factors. This suggests an important role for Sulf-1 and Sulf-2 in tumor progression.

## REFERENCES

- Morimoto-Tomita, M., et al. 2002. Cloning and characterization of two extracellular heparin-degrading endosulfatases in mice and humans. *J. Biol. Chem.* 277: 49175-49185.
- Saad, O.M., et al. 2005. Compositional profiling of heparin/heparan sulfate using mass spectrometry: assay for specificity of a novel extracellular human endosulfatase. *Glycobiology* 15: 818-826.
- Dai, Y., et al. 2005. HSULF-1 and HSULF-2 are potent inhibitors of myeloma tumor growth *in vivo*. *J. Biol. Chem.* 280: 40066-40073.
- Morimoto-Tomita, M., et al. 2005. Sulf-2, a proangiogenic heparan sulfate endosulfatase, is upregulated in breast cancer. *Neoplasia* 7: 1001-1010.
- Uchimura, K., et al. 2006. Measuring the activities of the Sulfs: two novel heparin/heparan sulfate endosulfatases. *Methods Enzymol.* 416: 243-253.

## CHROMOSOMAL LOCATION

Genetic locus: SULF1 (human) mapping to 8q13.2; Sulf1 (mouse) mapping to 1 A3.

## SOURCE

Sulf-1 (H-81) is a rabbit polyclonal antibody raised against amino acids 481-561 mapping within an extracellular domain of Sulf-1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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.

## APPLICATIONS

Sulf-1 (H-81) is recommended for detection of Sulf-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Sulf-1 (H-81) is also recommended for detection of Sulf-1 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for Sulf-1 siRNA (h): sc-77686, Sulf-1 siRNA (m): sc-153919, Sulf-1 shRNA Plasmid (h): sc-77686-SH, Sulf-1 shRNA Plasmid (m): sc-153919-SH, Sulf-1 shRNA (h) Lentiviral Particles: sc-77686-V and Sulf-1 shRNA (m) Lentiviral Particles: sc-153919-V.

Molecular Weight of glycosylated Sulf-1: 132 kDa.

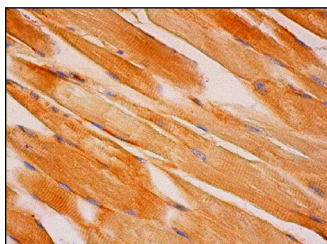
Molecular Weight of unprocessed Sulf-1 precursor: 100 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

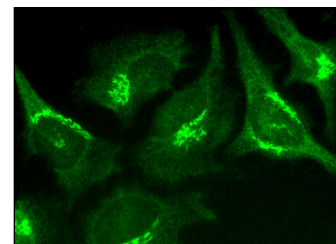
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



Sulf-1 (H-81): sc-98325. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes.



Sulf-1 (H-81): sc-98325. Immunofluorescence staining of methanol-fixed HeLa cells showing golgi apparatus and cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Gopal, G., et al. 2012. Endo-sulfatase Sulf-1 protein expression is down-regulated in gastric cancer. *Asian Pac. J. Cancer Prev.* 13: 641-646.