SANTA CRUZ BIOTECHNOLOGY, INC.

SerpinB1 (4D7): sc-293462

BACKGROUND

The serine proteinase inhibitors (serpins) compose a superfamily of proteins with a diverse set of functions, including the control of blood coagulation, complement activation, programmed cell death and development. Serpins are secreted glycoproteins that contain a stretch of peptide that mimics a true substrate for a corresponding serine protease. The monocyte/neutrophil elastase inhibitor gene, SerpinB1, belongs to the ov-serpin family (ovalbumin-related serpins). Human SerpinB1, also designated monocyte/neutrophil elastase inhibitor (M/NEI) or leukocyte elastase inhibitor (LEI), is a cytoplasmic protein which acts as a fast-acting stoichiometric proteinase inhibitor that regulates the activity of neutrophil elastase (NE), cathepsin-G and proteinase-3. There are four homologous genes in mouse designated SerpinB1a, SerpinB1b, SerpinB1c and the pseudogene, SerpinB1-ps1. The three protein-coding genes share significant sequence identity, however SerpinB1a (also designated EIA) has been characterized as the functional ortholog of human SerpinB1.

REFERENCES

1. Packard, B.Z., et al. 1995. A serpin from human tumor cells with direct lymphoid immunomodulatory activity: mitogenic stimulation of human tumor-infiltrating lymphocytes. Biochim. Biophys. Acta 1269: 41-50.
2. Zeng, W., et al. 1998. Structure and sequence of human M/NEI (monocyte/neutrophil elastase inhibitor), an ov-serpin family gene. Gene 213: 179-187.
3. Cooley, J., et al. 1998. Production of recombinant human monocyte/neutrophil elastase inhibitor (rM/NEI). Protein Expr. Purif. 14: 38-44.
4. Sun, J., et al. 1998. A serpin gene cluster on human chromosome 6p25 contains PI6, PI9 and ELANH2 which have a common structure almost identical to the 18q21 ovalbumin serpin genes. Cytogenet. Cell Genet. 82: 273-277.
5. Rees, D.D., et al. 1999. Recombinant human monocyte/neutrophil elastase inhibitor protects rat lungs against injury from cystic fibrosis airway secretions. Am. J. Respir. Cell Mol. Biol. 20: 69-78.
6. Benarafa, C., et al. 2002. Characterization of four murine homologs of the human ov-serpin monocyte neutrophil elastase inhibitor MNEI (SERPINB1). J. Biol. Chem. 277: 42028-42033.

CHROMOSOMAL LOCATION

Genetic locus: SERPINB1 (human) mapping to 6p25.2.

SOURCE

SerpinB1 (4D7) is a mouse monoclonal antibody raised against amino acids 201-300 representing partial length SerpinB1 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.

RESEARCH USE

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

APPLICATIONS

SerpinB1 (4D7) is recommended for detection of SerpinB1 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)], 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 SerpinB1 siRNA (h): sc-45371, SerpinB1 shRNA Plasmid (h): sc-45371-SH and SerpinB1 shRNA (h) Lentiviral Particles: sc-45371-V.

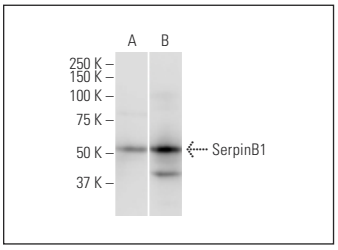
Molecular Weight of SerpinB1: 42 kDa.

Positive Controls: SerpinB1 transfected 293T whole cell lysate.

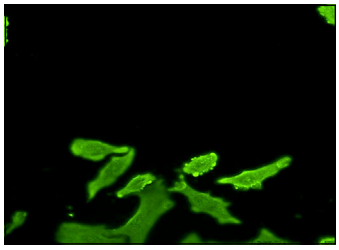
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



SerpinB1 (4D7): sc-293462. Western blot analysis of SerpinB1 expression in non-transfected (**A**) and SerpinB1 transfected (**B**) 293T whole cell lysates.



SerpinB1 (4D7): sc-293462. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization.

SELECT PRODUCT CITATIONS

1. Wang, H., et al. 2022. SerpinB1 overexpression protects myocardial damage induced by acute myocardial infarction through AMPK/mTOR pathway. BMC Cardiovasc. Disord. 22: 107.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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