SANTA CRUZ BIOTECHNOLOGY, INC.

Gelsolin (F-5): sc-514502

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Gelsolin (also known as brevin, Actin-depolymerizing factor or ADF), a protein of leukocytes, platelets and other cells, severs Actin filaments in the presence of submicromolar calcium, thereby isolating cytoplasmic Actin gels. A calcium-independent mechanism reverses the process. A Gelsolin variant with 23 more amino-terminal amino acids is a plasma component probably involved in the clearance of Actin, the most abundant human protein, from the circulation. It has been suggested that a single gene encodes both cell and plasma gelsolins. Gelsolin may be unique in that it is made for both secretion and intracytoplasmic location. Amino acid homology was identified between Gelsolin and the amyloid of the Finnish variety of amyloidosis. The amyloid in this disorder is antigenically and structurally related to Gelsolin. Gelsolin is the principal intracellular and extracellular Actin-severing protein. Gelsolin and Gc protein together constitute the extracellular Actin-scavenger system which prevents the toxic effects of Actin release into the extracellular space under circumstances of cell necrosis.

REFERENCES

1. Lind, S.E., et al. 1984. Human plasma Gelsolin binds to Fibronectin. J. Biol. Chem. 259: 13262-13266.
2. Fernandes-Alnemri, T., et al. 1995. Mch3, a novel human apoptotic cysteine protease highly related to CPP32. Cancer Res. 55: 6045-6052.
3. Takahashi, A., et al. 1996. Cleavage of Lamin A by Mch2 α but not CPP32: multiple interleukin-1 β-converting enzyme-related proteases with distinct substrate recognition properties are active in apoptosis. Proc. Natl. Acad. Sci. USA 93: 8395-8400.
4. Rao, L., et al. 1996. Lamin proteolysis facilitates nuclear events during apoptosis. J. Cell Biol. 135: 1441-1455.
5. Liu, X., et al. 1997. DFF, a heterodimeric protein that functions downstream of caspase-3 to trigger DNA fragmentation during apoptosis. Cell 89: 175-184.
6. Salvesen, G.S., et al. 1997. Caspases: intracellular signaling by proteolysis. Cell 91: 443-446.

CHROMOSOMAL LOCATION

Genetic locus: GSN (human) mapping to 9q33.2; Gsn (mouse) mapping to 2 B.

SOURCE

Gelsolin (F-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 759-780 at the C-terminus of Gelsolin of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514502 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

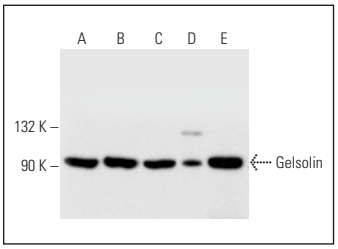
Gelsolin (F-5) is recommended for detection of plasma and cytoplasmic Gelsolin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

Suitable for use as control antibody for Gelsolin siRNA (h): sc-37330, Gelsolin siRNA (m): sc-37331, Gelsolin shRNA Plasmid (m): sc-37331-SH, Gelsolin shRNA Plasmid (h): sc-37330-SH, Gelsolin shRNA (h) Lentiviral Particles: sc-37330-V and Gelsolin shRNA (m) Lentiviral Particles: sc-37331-V.

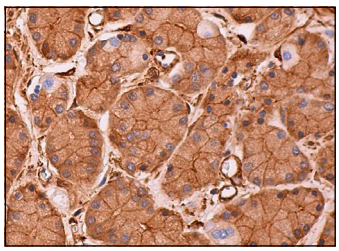
Molecular Weight of Gelsolin: 90 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, human uterus extract: sc-363784 or HISM cell lysate: sc-2229.

DATA



Gelsolin (F-5): sc-514502. Western blot analysis of Gelsolin expression in T-47D (**A**), HISM (**B**) and BJAB (**C**) whole cell lysates and human smooth muscle (**D**) and human uterus (**E**) tissue extracts.



Gelsolin (F-5): sc-514502. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic and membrane staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Acikgoz, E., et al. 2022. "Double hit" strategy: removal of sialic acid from the dendritic cell surface and loading with $CD44^+/CD24^-$/low cell lysate inhibits tumor growth and metastasis by targeting breast cancer stem cells. Int. Immunopharmacol. 107: 108684.
2. Manfrevola, F., et al. 2022. Actin remodeling driven by circLIMA1: sperm cell as an intriguing cellular model. Int. J. Biol. Sci. 18: 5136-5153.

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.