

Calpastatin (h3): 293T Lysate: sc-170217

BACKGROUND

Calpains are nonlysosomal, calcium-activated intracellular cysteine proteases that mediate specific Ca^{2+} -dependent processes including cell fusion, mitosis and meiosis. Calpains are heterodimers of a small regulatory subunit and one of three large catalytic subunits, designated Calpain 1, Calpain 2 and Calpain p94. Calpain 1 is an intracellular calcium-dependent protease that cleaves cytoskeletal and submembranous proteins. Calpain-1 co-localizes with human leukocyte antigen-DR (HLA-DR) on activated microglia in the aging brain. Calpain influences the process of spermatogenesis and the events preceding fertilization, such as the acrosome reaction. Calpastatin regulates Calpain by inhibiting both the proteolytic activity of Calpain and its binding to membranes. Calpastatin exists in two types, tissue type and erythrocyte type, resulting from both alternative splicing and proteolytic processing.

REFERENCES

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2. Takano, E., et al. 1991. Molecular diversity of erythrocyte Calpastatin. *Biomed. Biochim. Acta* 50: 517-521.
3. Takano, E., et al. 1993. Molecular diversity of Calpastatin in human erythroid cells. *Arch. Biochem. Biophys.* 303: 349-354.
4. Kawasaki, H., et al. 1996. Regulation of the Calpain-Calpastatin system by membranes. *Mol. Membr. Biol.* 13: 217-224.
5. Johnson, G.V., et al. 1997. Calpains: intact and active? *Bioessays* 19: 1011-1018.
6. Elce, J.S., et al. 1997. Autolysis, Ca^{2+} requirement, and heterodimer stability in μ -Calpain. *J. Biol. Chem.* 272: 11268-11275.
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8. Kiss, R., et al. 2008. Local structural preferences of Calpastatin, the intrinsically unstructured protein inhibitor of Calpain. *Biochemistry* 47: 6936-6945.
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CHROMOSOMAL LOCATION

Genetic locus: CAST (human) mapping to 5q15.

PRODUCT

Calpastatin (h3): 293T Lysate represents a lysate of human Calpastatin transfected 293T cells and is provided as 100 μg protein in 200 μl SDS-PAGE buffer.

STORAGE

Store at -20°C . Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

APPLICATIONS

Calpastatin (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive Calpastatin antibodies. Recommended use: 10-20 μl per lane.

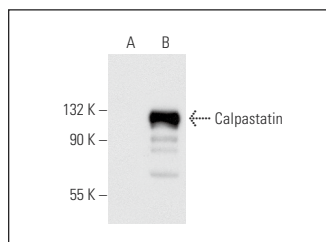
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Calpastatin (2Q31): sc-70486 is recommended as a positive control antibody for Western Blot analysis of enhanced human Calpastatin expression in Calpastatin transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

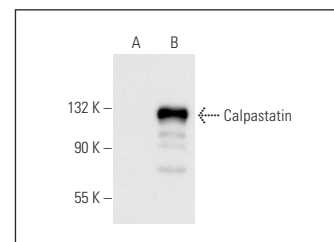
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

DATA



Calpastatin (2Q31): sc-70486. Western blot analysis of Calpastatin expression in non-transfected: sc-117752 (A) and human Calpastatin transfected: sc-170217 (B) 293T whole cell lysates.



Calpastatin (PI-11): sc-32324. Western blot analysis of Calpastatin expression in non-transfected: sc-117752 (A) and human Calpastatin transfected: sc-170217 (B) 293T whole cell lysates.

PROTOCOLS

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