

# Calpastatin (H-300): sc-20779

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: CAST (human) mapping to 5q15; Cast (mouse) mapping to 13 C1.

## SOURCE

Calpastatin (H-300) is a rabbit polyclonal antibody raised against amino acids 409-708 mapping at the C-terminus of Calpastatin 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.

## APPLICATIONS

Calpastatin (H-300) is recommended for detection of Calpastatin 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).

Suitable for use as control antibody for Calpastatin siRNA (h): sc-29889, Calpastatin siRNA (m): sc-29890, Calpastatin shRNA Plasmid (h): sc-29889-SH, Calpastatin shRNA Plasmid (m): sc-29890-SH, Calpastatin shRNA (h) Lentiviral Particles: sc-29889-V and Calpastatin shRNA (m) Lenti-viral Particles: sc-29890-V.

Molecular Weight of Calpastatin: 126 kDa.

Positive Controls: Calpastatin (h): 293 Lysate: sc-111220, rat heart extract: sc-2393 or WEHI-231 whole cell lysate: sc-2213.

## STORAGE

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

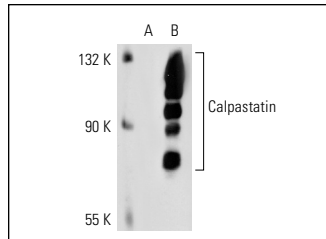
## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

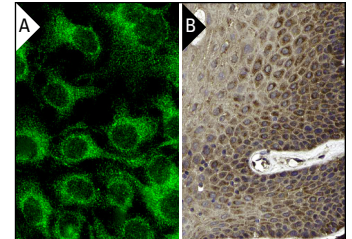
## RESEARCH USE

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

## DATA



Calpastatin (H-300): sc-20779. Western blot analysis of Calpastatin expression in non-transfected: sc-110760 (A) and human Calpastatin-transfected: sc-111220 (B) 293 whole cell lysates.



Calpastatin (H-300): sc-20779. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic staining of surface epithelial cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

## SELECT PRODUCT CITATIONS

- Dargelos, E., et al. 2007. Involvement of the calcium-dependent proteolytic system in skeletal muscle aging. *Exp. Gerontol.* 42: 1088-1098.
- Vaisid, T., et al. 2007. Calpastatin levels affect calpain activation and calpain proteolytic activity in APP transgenic mouse model of Alzheimer's disease. *Neurochem. Int.* 51: 391-397.
- Elali, A., et al. 2011. Liver X receptor activation enhances blood-brain barrier integrity in the ischemic brain and increases the abundance of ATP-binding cassette transporters ABCB1 and ABCC1 on brain capillary cells. *Brain Pathol.* 22: 175-187.
- Baquedano, E., et al. 2011. Prenatal stress induces long-term effects in cell turnover in the hippocampus-hypothalamus-pituitary axis in adult male rats. *PLoS ONE* 6: e27549.
- Iguchi-Hashimoto, M., et al. 2011. Overexpression of a minimal domain of calpastatin suppresses IL-6 production and Th17 development via reduced NF- $\kappa$ B and increased STAT5 signals. *PLoS ONE* 6: e27020.
- Simões, A.T., et al. 2012. Calpastatin-mediated inhibition of calpains in the mouse brain prevents mutant ataxin 3 proteolysis, nuclear localization and aggregation, relieving Machado-Joseph disease. *Brain* 135: 2428-2439.
- Elkind, E., et al. 2012. Calpastatin upregulation in *Mycoplasma hyorhinis*-infected cells is promoted by the mycoplasma lipoproteins via the NF $\kappa$ B pathway. *Cell. Microbiol.* 14: 840-851.


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Try **Calpastatin (A-1): sc-376547** or **Calpastatin (PI-11): sc-32324**, our highly recommended monoclonal alternatives to Calpastatin (H-300).