

# Calpain 3 (H-80): sc-50334

## BACKGROUND

Calpain, an intracellular calcium-dependent protease that cleaves cytoskeletal and submembranous proteins, plays a role in cytoskeletal reorganization and muscle protein degradation. Calpain is a heterodimer composed of a small regulatory subunit and one of three large catalytic subunits, designated Calpain 1, Calpain 2 and Calpain 3. Calpain 3 (Calpain p94) is a muscle-preferred calcium activated neutral protease that localizes to the nucleus. The gene encoding human Calpain 3 maps to chromosome 15q15.1. Mutations involving the Calpain 3 gene are associated with limb-girdle muscle dystrophy type 2A, a form of autosomal recessive and progressive neuromuscular disorder. 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

1. Murachi, T., et al. 1984. Calcium-dependent proteinases and specific inhibitors: Calpain and Calpastatin. *Biochem. Soc. Symp.* 45: 149-167.
2. Takano, E., et al. 1991. Molecular diversity of erythrocyte Calpastatin. *Biomed. Biochim. Acta* 50: 517-521.

## CHROMOSOMAL LOCATION

Genetic locus: CAPN3 (human) mapping to 15q15.1; Capn3 (mouse) mapping to 2 E5.

## SOURCE

Calpain 3 (H-80) is a rabbit polyclonal antibody raised against amino acids 1-80 mapping at the N-terminus of Calpain 3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Calpain 3 (H-80) is recommended for detection of Calpain 3 isoforms I, II and III of mouse, rat and 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), 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).

Calpain 3 (H-80) is also recommended for detection of Calpain 3 isoforms I, II and III in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Calpain 3 siRNA (h): sc-41461, Calpain 3 siRNA (m): sc-41462, Calpain 3 shRNA Plasmid (h): sc-41461-SH, Calpain 3 shRNA Plasmid (m): sc-41462-SH, Calpain 3 shRNA (h) Lentiviral Particles: sc-41461-V and Calpain 3 shRNA (m) Lentiviral Particles: sc-41462-V.

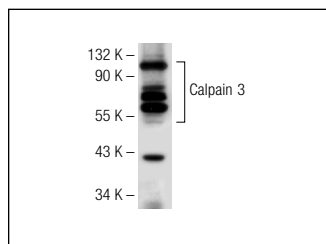
Molecular Weight of Calpain 3: 94 kDa.

Positive Controls: mouse brain extract: sc-2253.

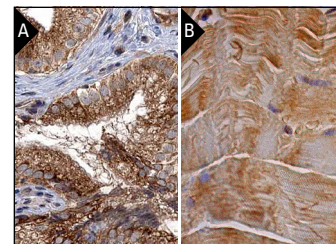
## RECOMMENDED SECONDARY REAGENTS

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



Calpain 3 (H-80): sc-50334. Western blot analysis of Calpain 3 expression in mouse brain tissue extract.



Calpain 3 (H-80): sc-50334. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gail bladder tissue showing cytoplasmic staining of glandular cells at high magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (B).

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.

**MONOS**  
Satisfaction  
Guaranteed

Try **Calpain 3 (E-6): sc-365277**, our highly recommended monoclonal alternative to Calpain 3 (H-80).