

# Calpain 2 Large Subunit (M-type) Antibody

✓ 100 µl  
(10 western blots)

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rev. 09/01/10

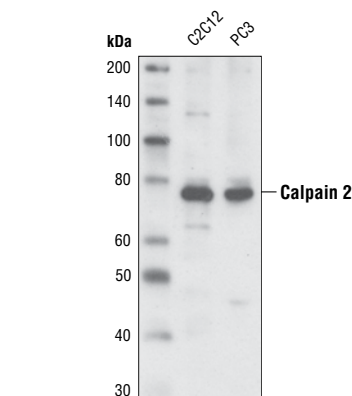
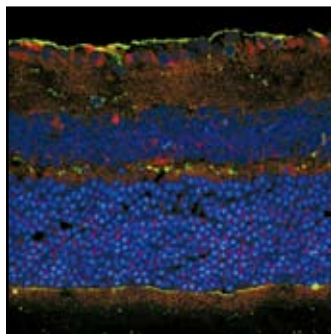
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP, IF-F, F Endogenous	H, M, R	80 kDa	Rabbit**

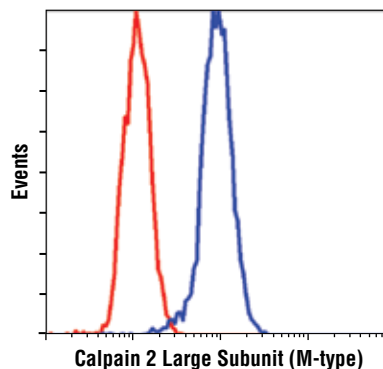
**Background:** Calpain is a calcium-dependent thiol proteinase that is functionally active as a heterodimer composed of a small regulatory subunit and one of at least two large catalytic subunits (calpain 1 or calpain 2). *In vitro*, calpain 1 ( $\mu$ -calpain) requires micromolar levels of calcium, while calpain 2 (M-calpain) requires millimolar levels of calcium for activation. The regulation of calpain *in vivo* is the subject of many current studies, which suggest that proteolytic activity is regulated post-transcriptionally by mechanisms such as calcium requirements, subcellular localization of the heterodimer, phosphorylation via the EGFR-Erk signaling cascade, endogenous inhibitors (calpastatin) and autoproteolytic cleavage (1). Calpastatin negatively regulates autoproteolytic cleavage of calpain 1 between Gly27 and Leu28 (2). Calpain influences cell migration by modifying rather than degrading its substrates responsible for cell adhesion and cytoskeletal arrangement. Control of calpain activity has caught the attention of drug development since limiting its activity could mute invasiveness of tumors or chronic inflammation (1).

**Specificity/Sensitivity:** Calpain 2 Large Subunit (M-type) Antibody detects endogenous levels of total calpain 2 (large subunit) protein. The antibody detects full-length calpain 2 as well as calpain 2 autoproteolytically cleaved at serine 20. The antibody does not detect recombinant calpain 1.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the human sequence of calpain 2 (large subunit). Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from C2C12 and PC3 cells, using Calpain 2 Large Subunit (M-type) Antibody.



Flow cytometric analysis of C2C12 cells, using Calpain 2 Large Subunit (M-type) Antibody (blue) compared to a nonspecific negative control antibody (red).

◀ Confocal immunofluorescent image of mouse retina labeled with Calpain 2 Large Subunit (M-type) Antibody (red) and Phospho-Tyrosine Mouse mAb (P-Tyr-100) #9411 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

**IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.**

Entrez-Gene ID #824  
Swiss-Prot Acc. #P17655

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

\*Species cross-reactivity is determined by western blot.

\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.

#### Recommended Antibody Dilutions:

Western Blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (IF-F)	1:25
Flow Cytometry	1:25

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

#### Background References:

- (1) Perrin, B.J. and Huttenlocher, A. (2002) *Int. J. Biochem. Cell Biol.* 34, 722–725.
- (2) Melloni, E. et al. (1996) *Biochem. Biophys. Res. Commun.* 229, 193–197

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**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide

**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine

Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.