Revision 3

#2539 Store at -20C

Calpain 2 Large Subunit (M-type) Antibody

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355) orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H M R	Endogenous	80	Rabbit	#P17655	824

Product Usage Information

Application	Dilution
Western Blotting	1:1000

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.

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.

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).

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.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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 **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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Limited Uses

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