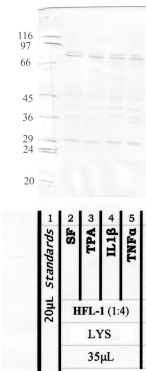


Anti-CAPN8 Rabbit Polyclonal Antibody

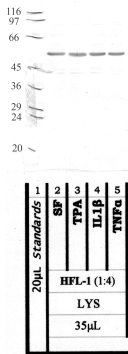
Calpain-8, EC 3.4.22.53, New calpain 2, nCL-2, Stomach-specific M-type calpain,

Gene: CAPN8 **UniProt:** A6NHC0 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

Product Image



Aminoterminal end Domain-I
RP1Calpain8



Domain-III
RP2Calpain8

— Western Blot (2-panel validation across domain-specific antibody clones)

Actual Western blot validation for anti-CAPN8 rabbit polyclonal antibody. 2-panel validation across domain-specific antibody clones — each panel labeled with its catalog number and target domain. Reducing conditions; 10–20 µg/lane on 7.5–10% SDS-PAGE.

Key Product Facts

Supplier	Triple Point Biologics, Inc. (Sudbury, Ontario, Canada)
Product Name	Anti-CAPN8 Rabbit Polyclonal Antibody
Gene Symbol	CAPN8
Alternative Names	Calpain-8, EC 3.4.22.53, New calpain 2, nCL-2, Stomach-specific M-type calpain,
UniProt ID	A6NHC0
Host Species	Rabbit
Clonality	Polyclonal (pAb)
Isotype	IgG
Concentration	1mg/ml
Purity	Affinity purified
Pack Size	100ug
Validated Application	WB
Recommended Dilution	WB-1/1000
Species Reactivity	Validated- Human Potential-Mouse, Rat
Immunogen Type	Synthetic Peptide from Uniprot Sequence
Conjugation	none
Buffer / Preservatives	Sodium Chloride 500 mM, Sodium Phosphate 10 mM, Potassium Phosphate 1.8 mM, Potassium Chloride 2.7 mM, Glycerol 50% (v/v)
Website	triplepointbiologics.com/anti-calpain-8-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of CAPN8. Each variant is directed at a specific structural region of the protein. Exact peptide sequences are proprietary; each variant is validated for the applications listed.

Domain / Variant	Epitope Region (approx. residues)	Cat. No.	Availability
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Â Aminoterminal end Domain-I	1–51 Region spanning the N-terminal anchor segment and the beginning of Domain-I (the calpain-type β -sandwich domain) of human Calpain-8, upstream of the core catalytic cysteine protease domain and distal from the calcium-binding EF-hand regions	RP1Calpain8	In catalog
Domain-III	356–379 Region within Domain-III of human Calpain-8, a C2-domain-like β -sandwich module situated between the catalytic domain (Domain-II) and the distal calcium-regulatory region; Domain-III is implicated in calcium-dependent membrane association and substrate positioning in calpain family members	RP2Calpain8	In catalog
—	1–703 Immunogen spanning multiple domains of human Calpain-8, covering regions from Domain-I through Domain-III and providing broad epitope coverage across the central catalytic and regulatory architecture of the protein	RP-Calpain8	In catalog

Applications & Recommended Dilutions

App.	Species	Dilution Range	Notes
WB	Validated-Human Potential-Mouse, Rat	1:1000	Optimal dilution should be determined per laboratory and lot.

Optimal dilutions should be determined by each laboratory for each application. Triple Point Biologics antibodies include a peptide-neutralized negative control aliquot for specific-signal confirmation.

Storage & Handling

Short-term Storage	+4°C (1–2 weeks)
Long-term Storage	Aliquot and store at -20°C
Shipping Conditions	Shipped in styrofoam cooler on blue ice
Hazard Warning	Product may contain Sodium Azide — POISONOUS AND HAZARDOUS. Handle by trained personnel only.
Shelf Life	12 months from date of receipt under recommended conditions

Target Background

Family & General Biology

Calpain-8 (CAPN8; EC 3.4.22.53) is a calcium-dependent, non-lysosomal cysteine protease belonging to the calpain superfamily. The superfamily is defined by a conserved catalytic triad (Cys-His-Asn) housed within a papain-like cysteine protease domain and by obligate calcium-mediated activation. Unlike the ubiquitous classical calpains CAPN1 (μ-calpain) and CAPN2 (m-calpain), which associate with the regulatory small subunit CAPNS1, CAPN8 is classified among the atypical or tissue-specific calpains that lack a conventional penta-EF-hand domain IV and operate independently of CAPNS1.

Expression & Localisation

CAPN8 expression is highly restricted compared with classical calpains. It is most abundantly expressed in the gastric mucosa, particularly in surface mucus cells lining the stomach lumen, earning it the designation 'stomach-specific M-type calpain' (nCL-2). Within these cells the protein is cytoplasmic, with enrichment near apical membranes consistent with a role in vesicular trafficking. Lower-level transcript expression has been reported in a limited number of other epithelial tissues, and protein re-expression or upregulation has been detected in specific cancer cell lines, broadening the contexts in which the protein can be studied.

Activation Mechanism

Like all calpains, CAPN8 requires calcium binding for protease activity. The protein undergoes calcium-induced conformational rearrangement that repositions the catalytic cysteine residue for nucleophilic attack on substrate peptide bonds. The precise calcium concentration required for half-maximal activation of CAPN8 in cellular contexts has not been as extensively characterised as for CAPN1 or CAPN2, but the enzyme is presumed to respond to transient elevations in cytosolic Ca²⁺. Autolytic processing of the N-terminal region, a feature shared with classical calpains, may further modulate activity in situ.

Key Substrates & Functions

The best-characterised substrate of CAPN8 in gastric mucosa is the β-COP subunit of the coatamer (COPI) vesicle coat complex. Proteolytic cleavage of β-COP by CAPN8 has been proposed to regulate membrane trafficking events at the Golgi and in secretory pathways of gastric pit cells, linking enzyme activity to mucus secretion and epithelial homeostasis. Beyond this, CAPN8 has been implicated in the processing of components of cell–cell adhesion and cytoskeletal regulation, consistent with roles observed for other calpain family members in epithelial biology.

Disease Relevance & Emerging Biology

Emerging evidence links CAPN8 to pathological contexts beyond gastric physiology. Altered CAPN8 expression has been reported in pancreatic and testicular cancers, where it may contribute to epithelial-mesenchymal transition and invasive behaviour. In addition, CAPN8 has been implicated in noncanonical Wnt signalling pathways governing convergent extension movements during vertebrate embryogenesis and craniofacial morphogenesis, suggesting developmental roles that extend the protein's biological significance. Gastric mucosal integrity studies have also raised interest in CAPN8 in the context of stress-induced gastropathy and mucosal barrier dysfunction.

Research Utility

CAPN8 serves as a tissue-specific marker for gastric surface mucus cells and as a functional target for investigators studying calpain-mediated proteolysis, secretory pathway regulation, and calcium signalling in epithelial systems. Its restricted expression makes it useful as a lineage marker in differentiation studies and in histopathological assessment of gastric tissue. Researchers working on calpain biology, gastric cancer, pancreatic cancer, or developmental signalling pathways increasingly include CAPN8 in multi-target panels alongside classical calpains and their endogenous inhibitors (calpastatins).

Gene & Protein Reference

Gene Symbol	CAPN8
HGNC	HGNC:1481

NCBI Gene ID (Human)	834
NCBI Gene ID (Mouse)	26360
Ensembl	ENSG00000103642
OMIM	606445
UniProt (Human)	A6NHC0
UniProt (Mouse)	Q9WUH2
Protein Family	Calpain superfamily; tissue-specific (atypical) calpain subfamily
Predicted MW	~82 kDa (703 aa; signal/pro-region processing may reduce apparent mass)
Observed MW	~80–85 kDa (SDS-PAGE, may vary by tissue and processing state)
Chromosome	1q41
Paralogue	CAPN9 (nCL-4; digestive-tract-specific calpain, most closely related atypical paralogue)
Key Substrates	β -COP (coatomer subunit β ; COPB1); putative cytoskeletal and adhesion-complex components
Activated by	Calcium (Ca ²⁺) binding; autolytic N-terminal processing
Inhibited by	Calpastatin (CAST; endogenous inhibitor); broad-spectrum cysteine protease inhibitors (e.g., E-64, calpeptin, MDL-28170)

About Triple Point Biologics

With over 30 years dedicated to antibody production, Triple Point Biologics is a Canadian company and the premier resource for proteinase and proteinase inhibitor research. Products have been cited in thousands of peer-reviewed publications.

The domain-specific antibody strategy — available in standard, ATK, SPA, and GSK kit formats — delivers predefined epitopes, built-in peptide-neutralized negative controls, and superior specificity for Western blot.

Website: www.triplepointbiologics.com

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Product specifications subject to change. Contact Triple Point Biologics for current product and availability information.