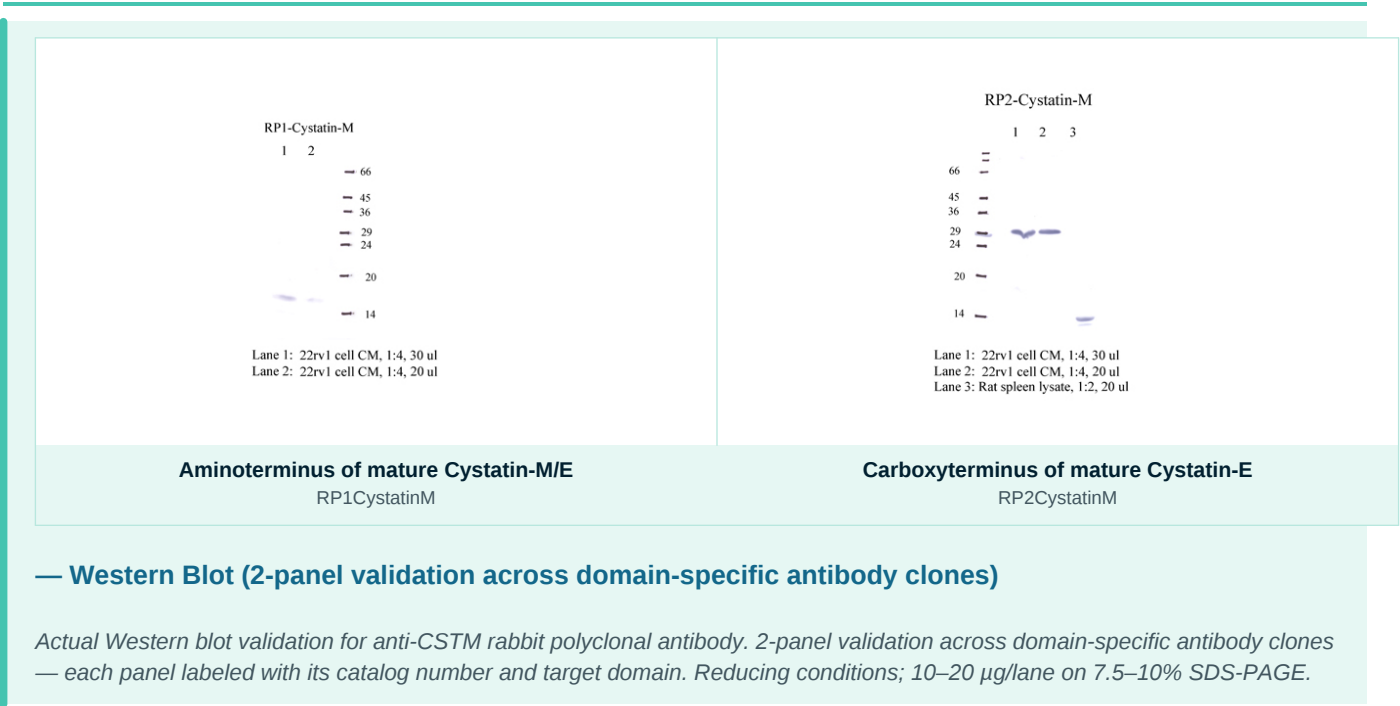


Anti-CSTM Rabbit Polyclonal Antibody

Cystatin-M, Cystatin-6, Cystatin-E,
Gene: CSTM **UniProt:** Q15828 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

Product Image



Key Product Facts

Supplier	Triple Point Biologics, Inc. (Sudbury, Ontario, Canada)
Product Name	Anti-CSTM Rabbit Polyclonal Antibody
Gene Symbol	CSTM
Alternative Names	Cystatin-M, Cystatin-6, Cystatin-E,
UniProt ID	Q15828
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-
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-cystatin-m-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of CSTM. 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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Aminotermminus of mature Cystatin-M/E.	29–79 Region spanning the N-terminal segment of the mature secreted Cystatin-M/E protein (following removal of the 19-residue signal peptide), upstream of the first conserved inhibitory hairpin loop (L1), within the unstructured N-terminal arm characteristic of type 2 cystatins	RP1CystatinM	In catalog
Carboxyterminus of mature Cystatin-E.	99–149 Region encompassing the C-terminal tail of mature Cystatin-M/E, distal to the second conserved inhibitory hairpin loop (L2) and the central alpha-helix, representing the terminal segment of the 149-residue mature protein	RP2CystatinM	In catalog
—	29–149 Broad region covering the full extent of the mature Cystatin-M/E protein, encompassing the N-terminal arm, the central alpha-helix, and both conserved inhibitory hairpin loops (L1 containing the QXVXG motif, and L2), providing reactivity across multiple structural domains of the mature secreted inhibitor	RP-CystatinM	In catalog

Applications & Recommended Dilutions

App.	Species	Dilution Range	Notes
WB	Validated-Human Potential-	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

Protein Family and General Biology

Cystatin-M (also designated Cystatin-E or Cystatin-6; gene symbol CST6; UniProt Q15828) is a 149-amino-acid secreted glycoprotein belonging to the type 2 cystatin superfamily of reversible, tight-binding cysteine protease inhibitors. Type 2 cystatins are characterised by an N-terminal region followed by two conserved hairpin loops (L1 and L2) that together form the wedge-shaped inhibitory surface engaging the active site of target proteases. Cystatin-M is most closely related to Cystatin-E and shares the conserved QXVXG motif in the first hairpin loop essential for cathepsin inhibition. The mature secreted form arises after removal of a 19-residue signal peptide.

Expression and Localisation

CST6 transcript and protein are most prominently expressed in stratified squamous epithelia, including the interfollicular epidermis, hair follicle inner root sheath, and the sweat gland apparatus. Expression is also detected in mammary ductal epithelium and selected other epithelial tissues. Within the skin, Cystatin-M accumulates in the upper spinous and granular layers, consistent with a role during terminal keratinocyte differentiation. The protein is secreted into the extracellular space and can additionally access the late endosomal/lysosomal compartment, positioning it to control both pericellular and intracellular proteolytic environments.

Inhibitory Mechanism and Key Substrates

Cystatin-M functions as a high-affinity, reversible, competitive inhibitor of cysteine cathepsins and the asparagine-specific endopeptidase legumain (LGMN/asparaginyl endopeptidase). Principal cathepsin targets include cathepsin L (CTSL) and cathepsin V (CTSV/cathepsin L2), both of which contribute to cornified-envelope processing and extracellular matrix remodelling. Inhibition of legumain is particularly relevant because legumain can act as an upstream activator of cathepsins B and L within endo-lysosomal compartments; Cystatin-M therefore exerts a cascading suppressive effect on this proteolytic network. The protein does not significantly inhibit cathepsin B under physiological conditions, distinguishing its substrate profile from other type 2 family members.

Role in Epidermal Cornification and Hair Follicle Biology

Genetic evidence from murine models firmly establishes Cystatin-M as a non-redundant regulator of epidermal homeostasis. Loss-of-function at the mouse *Cst6* locus produces the ichq (ichthyosis) phenotype, characterised by thickened, flaky skin and malformed hair shafts, resembling human ichthyosis syndromes. The phenotype reflects unrestrained cathepsin and legumain activity during stratum corneum formation and hair follicle morphogenesis. Within cornifying tissue, Cystatin-M is thought to protect structural proteins of the cornified envelope from premature degradation, ensuring proper barrier assembly and hair shaft crosslinking.

Disease Relevance: Epidermal Disorders and Cancer

In oncology, CST6 behaves as a candidate tumor suppressor gene in breast carcinoma and other epithelial malignancies. Promoter CpG island hypermethylation is a well-documented mechanism of CST6 silencing in primary breast tumors and cell lines, correlating with loss of protein expression. Restoration of Cystatin-M in CST6-silenced breast cancer cells reduces invasive behaviour in vitro, consistent with the protein restraining cathepsin- and legumain-driven extracellular matrix degradation. CST6 methylation status has been evaluated as a potential epigenetic biomarker in liquid biopsy and tissue contexts, though its clinical utility remains an active area of investigation.

Research Utility

Detection of Cystatin-M by immunohistochemistry provides spatial information on protease inhibitor distribution across epidermal layers and within tumor microenvironments. Western blot under reducing conditions typically resolves the mature glycoprotein at an apparent molecular weight modestly higher than the ~16 kDa sequence-predicted value, reflecting N-linked glycosylation. Antibodies targeting discrete regions of the mature protein—N-terminal versus C-terminal—are useful for confirming full-length expression versus potential truncation or processing artefacts, and for co-immunoprecipitation studies.

where one epitope may be sterically masked by binding partners such as cathepsin L or legumain.

Gene & Protein Reference

Gene Symbol	CSTM
HGNC	2479
NCBI Gene ID (Human)	1474
NCBI Gene ID (Mouse)	13014
Ensembl	ENSG00000101442
OMIM	601541
UniProt (Human)	Q15828
UniProt (Mouse)	P21460
Protein Family	Type 2 cystatin superfamily (cysteine protease inhibitor)
Predicted MW	~16 kDa (mature form, unglycosylated; ~18–20 kDa with N-linked glycosylation)
Observed MW	~18–22 kDa on SDS-PAGE (reflecting glycosylation)
Chromosome	11q13.1
Paralogue	CST5 (Cystatin-D), CST4 (Cystatin-S), CST3 (Cystatin-C)
Key Substrates	Cathepsin L (CTSL), Cathepsin V/L2 (CTSV), Legumain/asparaginyl endopeptidase (LGMN)
Activated by	Not applicable — functions as a protease inhibitor; secreted constitutively; activity modulated by pH (optimal at neutral-to-slightly-acidic pH)
Inhibited by	Proteolytic degradation by target cathepsins at excess enzyme concentrations; promoter hypermethylation silences expression in tumor contexts

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.