

Anti-CSTL1 Rabbit Polyclonal Antibody

Cystatin-like 1, RCET11,

Gene: CSTL1 **UniProt:** Q9H114 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

Product Image

Image placeholder — Western Blot

— Western Blot

Suggested image: Western blot of relevant cell or tissue lysates under reducing conditions, probed with the domain-specific antibody. Include a positive-control lane and empty-vector or knockout negative control. Loading: 10–20 µg/lane on 7.5–10% SDS-PAGE.

Key Product Facts

Supplier	Triple Point Biologics, Inc. (Sudbury, Ontario, Canada)
Product Name	Anti-CSTL1 Rabbit Polyclonal Antibody
Gene Symbol	CSTL1
Alternative Names	Cystatin-like 1, RCET11,
UniProt ID	Q9H114
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-like-1-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of CSTL1. 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
------------------	-----------------------------------	----------	--------------

Aminotermminus of mature Cystatin-Like1.	20–70 Region spanning the N-terminal segment of the mature CSTL1 protein immediately downstream of signal peptide cleavage; this portion encompasses the conserved N-terminal trunk that in type 2 cystatins contributes to the inhibitory interface with target cysteine proteases and precedes the first disulfide-stabilised hairpin loop	RP1CystatinLike 1	In catalogue
Carboxyterminus of mature Cystatin-Like1.	95–145 Region encompassing the C-terminal portion of the mature CSTL1 protein, downstream of the second disulfide-stabilised hairpin loop (L2); this segment completes the five-stranded antiparallel beta-sheet core of the type 2 cystatin fold and includes the C-terminal tail that contributes to overall structural stability	RP2CystatinLike 1	In catalogue
—	20–145 Immunogen spanning the full-length mature CSTL1 sequence, encompassing the N-terminal inhibitory trunk, both disulfide-stabilised hairpin loops (L1 and L2), and the C-terminal beta-sheet region of the type 2 cystatin fold; suitable for detection of multiple epitopes across the entire mature protein	RP-CystatinLike 1	In catalogue

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

Family & General Biology

Cystatin-Like 1 (CSTL1, also designated RCET11) is a 145-amino acid secreted protein classified within the type 2 cystatin superfamily — an evolutionarily conserved group of endogenous cysteine protease inhibitors. Type 2 cystatins share a characteristic fold comprising an alpha-helix packed against a five-stranded antiparallel beta-sheet and carry two conserved disulfide bonds that distinguish them from the intracellular type 1 cystatins. CSTL1 belongs to a reproductive tissue-specific subgroup of type 2 cystatins that also includes the Cres and Testatin proteins, all of which diverged from the broader cystatin lineage to acquire restricted tissue-expression patterns.

Expression & Tissue Distribution

Expression of CSTL1 is predominantly confined to reproductive tissues, with particularly high transcript and protein levels reported in the testis and epididymis. This tissue-restricted profile distinguishes CSTL1 from classical cystatins such as cystatin C, which are broadly expressed across many cell types and body fluids. The secreted nature of the protein suggests it acts within the luminal microenvironment of the male reproductive tract, where precisely regulated proteolytic activity is essential for sperm maturation, capacitation, and fertilization competence.

Protein Architecture & Secretion

Like other type 2 cystatins, CSTL1 is synthesized with an N-terminal signal peptide that directs it into the secretory pathway; cleavage of this signal peptide yields the mature secreted form. The mature protein retains the canonical cystatin fold, including the N-terminal region implicated in protease-binding interactions and the two hairpin loops (L1 and L2) that together form the inhibitory wedge engaging the active site of target cysteine proteases. The relatively compact 145-residue sequence provides limited opportunity for additional accessory domains, suggesting the protein's function is predominantly inhibitory.

Inhibitory Activity & Key Substrates

Classical type 2 cystatins potently inhibit papain-family cysteine proteases, including the cathepsins B, H, L, and S, through tight-binding reversible competitive inhibition. The reproductive cystatin subgroup to which CSTL1 belongs may exhibit a narrower or shifted inhibitory spectrum relative to cystatin C, consistent with specialization for particular proteases active in the epididymal lumen. The precise kinetic constants and substrate selectivity of CSTL1 have not been fully characterized in published literature, and its endogenous protease targets in the male reproductive tract remain an active area of investigation.

Role in Reproductive Physiology

The epididymis presents a tightly controlled proteolytic environment in which numerous serine, metallo-, and cysteine proteases collaborate to remodel sperm surface proteins during transit and maturation. Secreted cysteine protease inhibitors, including members of the CSTL1/Cres subgroup, are proposed to modulate the timing and extent of this proteolytic remodeling, protecting critical sperm surface antigens from premature degradation. Dysregulation of this inhibitor network could impair sperm function or fertility outcomes, making CSTL1 of interest in studies of male reproductive physiology and idiopathic infertility.

Disease Relevance & Research Utility

Beyond its primary role in reproductive tissue, the expression and secretion of CSTL1 in a defined glandular context makes it a potential biomarker of epididymal epithelial function. Protease-inhibitor imbalance is a recurring theme in inflammatory, neoplastic, and degenerative conditions affecting secretory epithelia, and disruptions to cystatin-family members have been linked to cancer invasiveness and lysosomal dysfunction in related tissue contexts. Antibodies targeting CSTL1 are used to define expression patterns by Western blot in human tissue sections, supporting both basic biology and exploratory translational research.

Gene & Protein Reference

Gene Symbol	CSTL1
HGNC	CSTL1 (HGNC:2484)
NCBI Gene ID (Human)	128821
NCBI Gene ID (Mouse)	
Ensembl	ENSG00000197142
OMIM	
UniProt (Human)	Q9H114
UniProt (Mouse)	
Protein Family	Type 2 cystatin superfamily; reproductive cystatin (Cres/Testatin) subgroup
Predicted MW	~16 kDa (mature form, signal peptide cleaved)
Observed MW	~16–18 kDa (SDS-PAGE; glycosylation and post-translational modifications may shift apparent mass)
Chromosome	20p11.21
Paralogue	Cystatin C (CST3); Cystatin E/M (CST6); Testatin/Cres subgroup members
Key Substrates	Papain-family cysteine proteases (cathepsins B, H, L, S); endogenous epididymal cysteine proteases (precise substrates not fully characterised)
Activated by	N/A — CSTL1 is a protease inhibitor, not a protease; no documented activating post-translational modification
Inhibited by	N/A — CSTL1 itself is an inhibitor; no documented endogenous inhibitors of CSTL1 activity have been characterised

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

FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES.
Product specifications subject to change. Contact Triple Point Biologics for current product and availability information.