

# Anti-CST9L Rabbit Polyclonal Antibody

Cystatin-like 1, RCET11,

**Gene:** CST9L **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-CST9L Rabbit Polyclonal Antibody                                                                                     |
| Gene Symbol            | CST9L                                                                                                                     |
| 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-9-like-1-rabbit-polyclonal-antibody                                                |

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of CST9L. 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-9Like-1. | <b>20–70</b><br>Region spanning the N-terminal segment of the mature secreted form of CST9L, immediately downstream of the predicted signal peptide cleavage site and preceding the first conserved disulfide-bonded loop; this region forms part of the tripartite inhibitory wedge that contacts the papain-family active site in type 2 cystatins   | RP1Cystatin9Li ke1 | In catalog |
| —                                          | <b>20–145</b><br>Broad epitope coverage spanning the full-length mature CST9L sequence, including the N-terminal inhibitory region, the first and second hairpin loops, and the C-terminal beta-sheet core stabilised by the two conserved type 2 cystatin disulfide bridges; suitable for detection of both native and denatured forms of the protein | RP-Cystatin9Li ke1 | 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

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

## Target Background

### Family & Classification

CST9L (also designated CSTL1 or RCET11) is a secreted protein belonging to the type 2 cystatin superfamily, a structurally conserved group of cysteine protease inhibitors defined by a signal peptide, two disulfide bridges, and conserved active-site

contact residues. Within this superfamily, CST9L clusters with the Cres/Testatin subgroup — a reproductive tissue-restricted clade that includes cystatin 8, cystatin 9, testatin, and several epididymis-specific paralogs encoded in a gene cluster on human chromosome 20q13. This subgroup is considered to have diverged from classical type 2 cystatins relatively late in mammalian evolution, acquiring narrow tissue-specific expression profiles.

Gene Structure & Protein Properties

The CST9L gene encodes a 145-amino-acid precursor carrying an N-terminal signal peptide that is cleaved upon secretion to yield the mature protein. The predicted molecular weight of the mature form is approximately 14–16 kDa, consistent with other compact type 2 family members. The protein contains the two disulfide bonds characteristic of the type 2 cystatin scaffold, which stabilize the core beta-sheet structure essential for protease engagement. Sequence conservation at the wedge-forming loop regions is lower in CST9L than in classical cystatins such as CST3, reflecting the functional divergence observed across the Cres subgroup.

Expression & Localisation

CST9L expression is highly restricted compared with ubiquitously expressed type 2 cystatins. Transcript and protein evidence places its predominant expression in the testis and epididymis, consistent with the broader pattern observed for Cres/Testatin subgroup members. Within the reproductive tract, secreted cystatins of this subgroup are detected in the luminal fluid, suggesting a role in the extracellular regulation of protease activity during sperm maturation and transit. Expression outside the reproductive system has not been robustly documented, underlining CST9L's utility as a tissue-restricted molecular marker in reproductive biology research.

Inhibitory Mechanism

Type 2 cystatins inhibit cysteine proteases — principally cathepsins B, H, L, and S — through a tight-binding, reversible mechanism that does not require covalent modification of the enzyme active site. The inhibitor presents a tripartite wedge formed by the N-terminal region and two hairpin loops that occlude the papain-family active site cleft. CST9L retains the structural determinants predicted to support this mode of inhibition, though direct *K<sub>i</sub>* measurements for individual cathepsin targets have not been extensively characterised, and its inhibitory spectrum may differ from classical cystatins owing to sequence divergence at the contact loops.

Biological Roles in Reproductive Biology

Members of the Cres/Testatin subgroup are implicated in the tightly regulated proteolytic environment of the epididymal lumen, where controlled cathepsin activity is required for sperm maturation, capacitation-associated remodelling, and the prevention of premature acrosomal exocytosis. CST9L, as a secreted inhibitor present in this compartment, is hypothesised to participate in maintaining protease–inhibitor balance during post-testicular sperm development. Disruption of this balance has been associated with subfertility phenotypes in rodent models involving related cystatin family members, providing a conceptual framework for investigating CST9L function.

Disease Relevance & Research Utility

Owing to its restricted expression pattern, CST9L is not implicated in the broad tissue-remodelling or inflammatory contexts associated with widely expressed cystatins such as cystatin C. Research interest centres on male reproductive physiology, idiopathic subfertility, and the molecular evolution of tissue-specific protease inhibitor families. CST9L also serves as a reference marker for investigating the chromosomal 20q13 cystatin gene cluster in genomic and transcriptomic studies. Antibodies directed against the N-terminus of the mature protein or spanning multiple domains support detection in Western blot, immunohistochemistry, and immunofluorescence formats across reproductive tissue specimens.

Gene & Protein Reference

|             |       |
|-------------|-------|
| Gene Symbol | CST9L |
|-------------|-------|

|                      |                                                                                                                                          |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| HGNC                 | CSTL1 (HGNC:2484)                                                                                                                        |
| NCBI Gene ID (Human) | 374403                                                                                                                                   |
| NCBI Gene ID (Mouse) |                                                                                                                                          |
| Ensembl              | ENSG00000198824                                                                                                                          |
| OMIM                 |                                                                                                                                          |
| UniProt (Human)      | Q9H114                                                                                                                                   |
| UniProt (Mouse)      |                                                                                                                                          |
| Protein Family       | Type 2 cystatin superfamily, Cres/Testatin subgroup                                                                                      |
| Predicted MW         | ~14–16 kDa (mature secreted form)                                                                                                        |
| Observed MW          | ~14–18 kDa (SDS-PAGE, reducing conditions)                                                                                               |
| Chromosome           | 20q13                                                                                                                                    |
| Paralogue            | CST8 (Cystatin-8/CRES), CST9 (Cystatin-9/Testatin), CST3 (Cystatin-C)                                                                    |
| Key Substrates       | Not directly applicable — CST9L is an inhibitor; principal target proteases are papain-family cysteine proteases (cathepsins B, H, L, S) |
| Activated by         | Not established; secretion constitutive following signal peptide cleavage                                                                |
| Inhibited by         | Not applicable (CST9L is itself a protease inhibitor; activity may be modulated by disulfide reduction)                                  |

## 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](http://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.