

# Anti-MMP27 Rabbit Polyclonal Antibody

Matrix metalloproteinase-27, MMP-27, EC 3.4.24.-,

**Gene:** MMP27 **UniProt:** Q9H306 **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-MMP27 Rabbit Polyclonal Antibody                                                                                     |
| Gene Symbol            | MMP27                                                                                                                     |
| Alternative Names      | Matrix metalloproteinase-27, MMP-27, EC 3.4.24.-,                                                                         |
| UniProt ID             | Q9H306                                                                                                                    |
| 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, Pan, Monkey, Dog                                                                   |
| 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-mmp-27-rabbit-polyclonal-antibody                                                           |

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of MMP27. 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 |
|------------------|-----------------------------------|----------|--------------|
|------------------|-----------------------------------|----------|--------------|

|                                            |                                                                                                                                                                                                                                                                 |           |            |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|
| Propeptide domain<br>Human MMP-27          | <b>18–98</b><br>Region within the N-terminal propeptide (prodomain) of human MMP-27, encompassing the cysteine-switch motif responsible for coordinating the catalytic zinc ion and maintaining zymogen latency prior to proteolytic activation                 | RP1MMP27  | In catalog |
| Aminoterminal end<br>active Human MMP-27   | <b>99–149</b><br>Region at the N-terminal portion of the catalytic domain of human MMP-27, immediately downstream of the propeptide cleavage site and encompassing structural elements that form the upper rim of the active-site cleft                         | RP2MMP27  | In catalog |
| Hinge region Human<br>MMP-27               | <b>251–275</b><br>Region within the proline-rich hinge (linker) segment of human MMP-27, situated between the C-terminal boundary of the catalytic domain and the N-terminal boundary of the hemopexin-like domain, and contributing to interdomain flexibility | RP3MMP27  | In catalog |
| Carboxyterminal end<br>Human MMP-27        | <b>463–513</b><br>Region within the C-terminal hemopexin-like domain of human MMP-27, encompassing blade-IV and the terminal residues of the four-bladed beta-propeller fold that mediates substrate binding and protein–protein interactions                   | RP4MMP27  | In catalog |
| —                                          | <b>99–513</b><br>Broad-coverage immunogen spanning multiple domains of human MMP-27, including the propeptide, catalytic domain, hinge region, and hemopexin-like domain, providing reactivity across the full-length and processed forms of the protein        | RP-MMP27  | In catalog |
| Propeptide domain<br>Chicken MMP-27        | <b>18–98</b><br>Region within the N-terminal propeptide of chicken MMP-27, orthologous to the cysteine-switch-containing prodomain of the human protein, used as immunogen for applications in avian model systems                                              | RP1MMP27C | In catalog |
| Aminoterminal end<br>active Chicken MMP-27 | <b>99–149</b><br>Region at the N-terminal portion of the catalytic domain of chicken MMP-27, orthologous to the corresponding segment of human MMP-27 and positioned immediately downstream of the propeptide cleavage site                                     | RP2MMP27C | In catalog |
| Hinge region Chicken<br>MMP-27             | <b>251–275</b><br>Region within the proline-rich hinge linker of chicken MMP-27, connecting the catalytic and hemopexin-like domains in a position orthologous to the hinge segment of the human protein                                                        | RP3MMP27C | In catalog |

|                                       |                                                                                                                                                                                                                                                                            |           |            |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|
| Carboxyterminal end<br>Chicken MMP-27 | <b>463–513</b><br>Region within the C-terminal hemopexin-like domain of chicken MMP-27, spanning the terminal portion of the four-bladed beta-propeller fold in the avian orthologue of human MMP-27                                                                       | RP4MMP27C | In catalog |
| —                                     | <b>99–513</b><br>Broad-coverage immunogen spanning multiple domains of chicken MMP-27, including the propeptide, catalytic domain, hinge region, and hemopexin-like domain, designed to maximise detection of the avian protein across its full-length and processed forms | RP-MMP27C | In catalog |

Applications & Recommended Dilutions

| App. | Species                                                              | Dilution Range | Notes                                                         |
|------|----------------------------------------------------------------------|----------------|---------------------------------------------------------------|
| WB   | Validated-<br>Human Potenti<br>al-Mouse, Rat,<br>Pan, Monkey,<br>Dog | 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

Matrix metalloproteinase-27 (MMP-27) is a zinc-dependent endopeptidase belonging to the matrix metalloproteinase (MMP) family, a group of structurally related proteases that collectively orchestrate extracellular matrix (ECM) turnover. Like all MMPs, MMP-27 carries the conserved HEXXHXXGXXH zinc-binding motif within its catalytic domain and is synthesized as a latent zymogen with an N-terminal prodomain. MMP-27 is classified among the non-secreted or minimally secreted MMPs; its intracellular retention in the endoplasmic reticulum distinguishes it from the majority of family members that are routed through

the secretory pathway to the pericellular or extracellular space.

### Expression & Localisation

MMP-27 expression has been documented in a restricted range of human tissues, with reported transcription in brain, testes, and certain epithelial compartments. At the subcellular level, MMP-27 protein localises predominantly to the endoplasmic reticulum rather than to secretory vesicles or the cell surface, a feature that places it in a distinct functional niche relative to membrane-type MMPs and classical secreted collagenases. Expression profiling studies have identified altered MMP-27 levels in a number of carcinoma types, and its detection has been reported in tumour-associated stromal and epithelial cells, suggesting context-dependent transcriptional regulation.

### Activation Mechanism

MMP-27 is translated as a zymogen in which the cysteine switch motif of the propeptide coordinates the catalytic zinc ion, maintaining latency. Activation requires disruption of this cysteine–zinc interaction and subsequent removal of the prodomain, either autocatalytically or through the action of other proteinases. The precise physiological activators of MMP-27 have not been definitively established in vivo. Given its intracellular localisation, activation may occur in a compartment-specific manner distinct from the furin-mediated or plasmin-mediated activation pathways commonly described for secreted MMPs, though this remains an active area of investigation.

### Key Substrates

Biochemical characterisation indicates that MMP-27 retains catalytic activity against several canonical ECM components, including fibronectin, laminin, gelatins (denatured collagens), and interstitial collagens. The breadth of substrate recognition is consistent with MMP-27's possession of a functional hemopexin-like domain, which contributes to substrate binding and specificity in other family members. The physiological substrate repertoire in intact cellular contexts remains incompletely mapped, in part because of the protein's atypical intracellular localisation and the challenges of reconstituting ER-luminal proteolysis in vitro.

### Disease Relevance

MMP-27 has attracted interest in oncology, where its expression has been examined in oral squamous cell carcinoma, colorectal cancer, and other epithelial malignancies. Reduced MMP-27 expression has been associated with mandibular bone invasion in oral squamous cell carcinoma, raising the possibility of a context-dependent tumour-suppressive function, in contrast to the pro-invasive roles attributed to many other MMP family members. Conversely, elevated MMP-27 levels have been reported in certain tumour types in association with disease progression, indicating that its net biological effect may be highly tissue- and stage-specific.

### Inhibitor Profile

Like other MMP family members, MMP-27 is subject to inhibition by tissue inhibitors of metalloproteinases (TIMPs), which bind the active site in a stoichiometric, non-covalent manner. TIMP-1, TIMP-2, TIMP-3, and TIMP-4 all share the capacity to inhibit multiple MMPs; the precise TIMP selectivity profile for MMP-27 has not been exhaustively characterised. Broad-spectrum MMP inhibitors, including hydroxamate compounds such as GM6001 (ilomastat), are expected to inhibit MMP-27 based on the conserved catalytic mechanism, and EDTA-mediated zinc chelation abolishes activity in vitro.

## Gene & Protein Reference

|                      |       |
|----------------------|-------|
| Gene Symbol          | MMP27 |
| HGNC                 | 7160  |
| NCBI Gene ID (Human) | 83931 |

|                      |                                                                                                                                       |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| NCBI Gene ID (Mouse) | 241827                                                                                                                                |
| Ensembl              | ENSG00000137675                                                                                                                       |
| OMIM                 | 608580                                                                                                                                |
| UniProt (Human)      | Q9H306                                                                                                                                |
| UniProt (Mouse)      | Q8CG18                                                                                                                                |
| Protein Family       | Peptidase M10A (Matrixin) family; Matrix metalloproteinase subfamily                                                                  |
| Predicted MW         | ~57 kDa (full-length zymogen); ~43 kDa (mature catalytic form, after propeptide removal)                                              |
| Observed MW          | ~55–65 kDa on SDS-PAGE (variable with glycosylation state)                                                                            |
| Chromosome           | 11q22.2                                                                                                                               |
| Paralogue            | MMP-19 (RASI-1); MMP-20 (enamelysin); MMP-26 (matrilysin-2)                                                                           |
| Key Substrates       | Fibronectin, laminin, gelatin (type I and IV), interstitial collagens                                                                 |
| Activated by         | Autocatalytic activation (cysteine-switch mechanism); potential upstream proteinase activation not fully characterised in vivo        |
| Inhibited by         | TIMP-1, TIMP-2, TIMP-3, TIMP-4 (predicted by class); hydroxamate-based MMP inhibitors (e.g., GM6001/ilomastat); EDTA (zinc chelation) |

## 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)

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