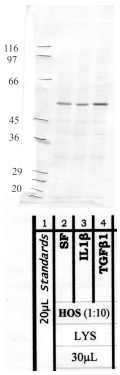
Anti-MMP8 Rabbit Polyclonal Antibody

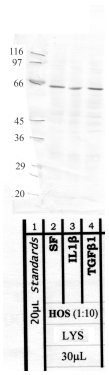
Neutrophil collagenase, EC 3.4.24.34, Matrix metalloproteinase-8, MMP-8, PMNL collagenase, PMNL-CL,

Gene: MMP8 **UniProt:** P22894 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

Product Image



Hinge region
RP1MMP8



Carboxyterminal end
RP3MMP8

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

Actual Western blot validation for anti-MMP8 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-MMP8 Rabbit Polyclonal Antibody
Gene Symbol	MMP8
Alternative Names	Neutrophil collagenase, EC 3.4.24.34, Matrix metalloproteinase-8, MMP-8, PMNL collagenase, PMNL-CL,
UniProt ID	P22894
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-8-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of MMP8. 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

Hinge Region	**251–275** Region within the proline-rich hinge (linker) segment of human MMP-8 that connects the C-terminal boundary of the catalytic domain to the N-terminal blade of the hemopexin-like domain, a flexible loop accessible on the surface of both latent and active enzyme forms	RP1MMP8	In catalog
Â Aminoterminal end of active enzyme	**101–151** Region spanning the neogenic N-terminus generated after propeptide removal in human MMP-8, corresponding to the first residues of the catalytic domain that become exposed upon zymogen activation and are critical for defining the mature, active enzyme conformation	RP2MMP8	In catalog
Carboxyterminal end	**417–467** Region at the extreme C-terminal end of the hemopexin-like domain of human MMP-8, within the fourth blade of the four-bladed β-propeller structure, a surface-exposed segment involved in protein–protein interactions and substrate docking	RP3MMP8	In catalog
Propeptide region	**21–100** Region within the N-terminal propeptide domain of human MMP-8, which maintains zymogen latency via the cysteine-switch mechanism; this domain is removed during extracellular activation and is absent from the fully processed, catalytically active enzyme	RP4MMP8	In catalog
—	**101–467** Broad immunogen spanning multiple domains of human MMP-8 — encompassing elements of the propeptide, catalytic, hinge, and hemopexin-like domains — yielding a polyclonal antibody mixture capable of recognising epitopes across the full-length protein architecture in both latent and active forms	RP-MMP8	In catalog

Applications & Recommended Dilutions

App.	Species	Dilution Range	Notes
WB	Validated-Human Potential-Mouse, Rat, Pan, Monkey, 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-8 (MMP-8, neutrophil collagenase; EC 3.4.24.34) is a zinc- and calcium-dependent endopeptidase of the matrixin family (clan MA, family M10A). It shares the hallmark HEXXHXXGXXH zinc-binding motif common to all MMPs, a conserved methionine-containing 'Met-turn' below the catalytic zinc, and a C-terminal hemopexin-like domain that governs substrate specificity and protein–protein interactions. MMP-8 is most closely related to MMP-1 (fibroblast collagenase) and MMP-13 (collagenase-3), together constituting the collagenase subgroup distinguished by their ability to cleave native triple-helical fibrillar collagens.

Expression & Localisation

MMP-8 is predominantly expressed in polymorphonuclear neutrophils, where the mature enzyme is pre-packaged in secondary (specific) granules and tertiary (gelatinase) granules during granulopoiesis in the bone marrow. Upon neutrophil activation by inflammatory stimuli — including lipopolysaccharide, IL-8, TNF-α, and complement fragments — MMP-8 is rapidly secreted by exocytosis, providing a fast-acting collagenolytic burst at sites of acute inflammation. Expression has also been documented in chondrocytes, synovial fibroblasts, endometrial cells, and various epithelial tumour cells, indicating that MMP-8 production is not exclusively restricted to the myeloid lineage under pathological conditions.

Activation Mechanism

Like all MMPs, MMP-8 is synthesised as a latent zymogen. Latency is maintained by a cysteine-switch mechanism in which a conserved cysteine residue in the N-terminal propeptide coordinates the catalytic zinc ion, blocking substrate access. Extracellular activation proceeds stepwise: initial cleavage of the propeptide — by plasmin, trypsin, plasma kallikrein, or other MMPs including MMP-3 — disrupts the cysteine–zinc interaction, generating an intermediate that autocatalytically removes the remaining propeptide to yield the fully active ~50–55 kDa form. Activation can also proceed on the cell surface in association with membrane-bound MT-MMPs.

Key Substrates

MMP-8 cleaves interstitial (fibrillar) collagens — type I, II, and III — at a single conserved Gly–Leu/Ile bond approximately three-quarters from the N-terminus, producing characteristic 3/4 and 1/4 fragments. Beyond structural collagens, verified non-matrix substrates include fibronectin, laminin, aggrecan, serpins (α1-proteinase inhibitor, α2-macroglobulin), and several chemokines such as CXCL5 and CXCL8. Proteolytic processing of chemokines by MMP-8 can either attenuate or amplify neutrophil recruitment, placing MMP-8 at a regulatory node between matrix remodelling and inflammatory cell trafficking.

Inhibitor Profile

MMP-8 activity is physiologically restrained by tissue inhibitors of metalloproteinases, with TIMP-1 and TIMP-2 being the primary endogenous inhibitors. TIMP-1 inhibits MMP-8 with high affinity by inserting its N-terminal domain into the enzyme's active site cleft. α2-Macroglobulin sequesters active MMP-8 in the circulation. Synthetic inhibition is achieved by hydroxamate-based and carboxylate-based small-molecule MMP inhibitors, several of which have been evaluated clinically for inflammatory and oncological indications, though selectivity among collagenases remains a pharmacological challenge.

Disease Relevance

Elevated MMP-8 levels are established biomarkers of neutrophilic inflammation in periodontitis, rheumatoid arthritis, osteoarthritis, and acute lung injury. In cancer biology, MMP-8 occupies an unusual position: in contrast to most MMPs that facilitate tumour progression, MMP-8 loss-of-function or reduced expression is associated with increased metastatic potential in several tumour types, consistent with a tumour-suppressive role mediated in part through chemokine processing and modulation of the tumour microenvironment. MMP-8 is also implicated in wound healing, atherosclerotic plaque rupture, and sepsis-associated tissue injury, making it a target of broad translational interest.

Gene & Protein Reference

Gene Symbol	MMP8
HGNC	7175
NCBI Gene ID (Human)	4317
NCBI Gene ID (Mouse)	17394
Ensembl	ENSG00000118113
OMIM	120355
UniProt (Human)	P22894
UniProt (Mouse)	O70138
Protein Family	Peptidase M10A (matrixin) family; collagenase subgroup
Predicted MW	53.4 kDa (proform ~75 kDa including propeptide; mature active form ~50–55 kDa)
Observed MW	~75 kDa (latent) / ~50–55 kDa (active) on reducing SDS-PAGE
Chromosome	11q22.2
Paralogue	MMP-1 (fibroblast collagenase), MMP-13 (collagenase-3)
Key Substrates	Type I, II, III fibrillar collagens; fibronectin; laminin; aggrecan; α1-proteinase inhibitor; CXCL5; CXCL8
Activated by	Plasmin, trypsin, plasma kallikrein, MMP-3, MT1-MMP; autocatalytic intermediate processing
Inhibited by	TIMP-1 (primary), TIMP-2, α2-macroglobulin; hydroxamate- and carboxylate-based synthetic MMP inhibitors

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.