Anti-MMP24 Rabbit Polyclonal Antibody

Matrix metalloproteinase-24, MMP-24, EC 3.4.24.-, Membrane-type matrix metalloproteinase 5, MT-MMP 5, MTMMP5, Membrane-type-5 matrix metalloproteinase, MT5-MMP, MT5MMP,

Gene: MMP24 **UniProt:** Q9Y5R2 **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-MMP24 Rabbit Polyclonal Antibody
Gene Symbol	MMP24
Alternative Names	Matrix metalloproteinase-24, MMP-24, EC 3.4.24.-, Membrane-type matrix metalloproteinase 5, MT-MMP 5, MTMMP5, Membrane-type-5 matrix metalloproteinase, MT5-MMP, MT5MMP,
UniProt ID	Q9Y5R2
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-mmp-24h-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of MMP24. 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

Cytoplasmic domain MMP-24	**~622–645** Region within the short cytoplasmic tail of human MMP-24, C-terminal to the transmembrane-spanning segment, representing the intracellular portion of this type-I transmembrane metalloprotease	RP1MMP24H	In catalog
Hinge domain MMP-24	**323–380** Region within the linker (hinge) segment of human MMP-24 connecting the catalytic metalloprotease domain to the hemopexin-like domain, a proline-rich interdomain spacer characteristic of the MMP family	RP2MMP24H	In catalog
Furin Cleavage Site	**147–158** Region encompassing the furin-recognition motif at the propeptide–catalytic domain boundary of human MMP-24, where proprotein convertases cleave to generate the mature, active enzyme within the trans-Golgi network	RP3MMP24H	In catalog
Propeptide domain MMP-24	**53–155** Region within the N-terminal prodomain of human MMP-24, which maintains enzyme latency via the conserved cysteine-switch mechanism prior to furin-mediated activation	RP4MMP24H	In catalog
Aminoterminal end active MMP-24	**156–206** Region at the immediate N-terminus of the mature catalytic domain of human MMP-24, generated after furin cleavage of the prodomain and representing the neo-N-terminus of the active enzyme	RP5MMP24H	In catalog
—	**156–645** Broad-coverage immunogen spanning multiple domains of human MMP-24, including the propeptide, catalytic, hinge, hemopexin-like, transmembrane, and cytoplasmic regions; suitable for detection of both precursor and processed forms	RP-MMP24H	In catalog
Cytoplasmic domain mouse MMP-24	**~622–645** Region within the short cytoplasmic tail of mouse MMP-24 (Mus musculus), C-terminal to the transmembrane domain, corresponding to the orthologous intracellular segment of the human protein (UniProt Q9WTQ2)	RP1MMP24M	In catalog
Hinge domain mouse MMP-24	**323–380** Region within the proline-rich linker (hinge) segment of mouse MMP-24, bridging the catalytic and hemopexin-like domains, corresponding to the orthologous hinge region of the human protein	RP2MMP24M	In catalog

Furin cleavage site mouse MMP-24	**147–158** Region surrounding the furin-recognition sequence at the prodomain–catalytic domain junction of mouse MMP-24, where proprotein convertase cleavage generates the active enzyme; orthologous to the human furin cleavage site	RP3MMP24M	In catalog
Propeptide domain mouse MMP-24	**53–155** Region within the N-terminal prodomain of mouse MMP-24, containing the cysteine-switch motif responsible for maintaining zymogen latency, orthologous to the human MMP-24 propeptide	RP4MMP24M	In catalog
—	**156–645** Broad-coverage immunogen spanning multiple domains of mouse MMP-24, including prodomain, catalytic, hinge, hemopexin-like, transmembrane, and cytoplasmic regions; suitable for detection of both precursor and processed forms in murine samples	RP-MMP24M	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 & General Biology

MMP-24 (MT5-MMP) is a member of the membrane-type matrix metalloproteinase (MT-MMP) subfamily within the broader metzincin superfamily. It shares the conserved catalytic zinc-binding motif (HEXXHXXGXXH) common to all MMPs, but is distinguished by a C-terminal transmembrane domain that anchors the enzyme to the plasma membrane, restricting proteolytic activity to the pericellular environment. Among the six MT-MMPs characterized to date, MMP-24 is most closely related to MMP-25 (MT6-MMP), with both enzymes sharing a furin-activatable propeptide and comparable domain organization. MMP-24 is classified under EC 3.4.24.-.

Expression & Localisation

MMP-24 expression is notably restricted compared to many other MMPs, with highest levels detected in the central and peripheral nervous systems. Within the brain, it is expressed in neurons and neural stem/progenitor cells, particularly in neurogenic niches such as the subependymal zone (SEZ) of the lateral ventricles. Lower levels have been reported in non-neural tissues. At the subcellular level, MMP-24 localizes to the plasma membrane via its transmembrane domain, with the short cytoplasmic tail oriented toward the cytosol and the catalytic ectodomain exposed at the cell surface, enabling spatially confined pericellular proteolysis.

Activation Mechanism

Like several other MT-MMPs, MMP-24 is synthesized as a zymogen with an N-terminal signal peptide and a prodomain that maintains enzyme latency through a conserved cysteine-switch mechanism. The prodomain contains a furin recognition sequence (RX[K/R]R motif), allowing intracellular activation by proprotein convertases of the furin family within the trans-Golgi network prior to trafficking to the cell surface. This furin-dependent activation is a defining feature that distinguishes MT5-MMP and related MT-MMPs from classical secreted MMPs, which are typically activated extracellularly.

Key Substrates & Enzymatic Activity

MMP-24 cleaves a defined set of substrates relevant to neural biology and extracellular matrix remodeling. Established substrates include N-cadherin (CDH2), progelatinase A (pro-MMP-2), dermatan sulfate and chondroitin sulfate proteoglycans, and fibronectin. Notably, MMP-24 does not efficiently cleave collagen type I or laminin under standard assay conditions, distinguishing its substrate repertoire from collagenolytic MMPs. Activation of pro-MMP-2 at the cell surface places MMP-24 within a proteolytic cascade relevant to basement membrane remodeling and cell invasion. N-cadherin shedding by MMP-24 has particular relevance for regulating cell-cell adhesion in neural tissues.

Physiological Roles in the Nervous System

MMP-24 performs several distinct roles in neural tissue homeostasis. In the adult subependymal zone, MMP-24-mediated cleavage of N-cadherin disrupts the anchorage of neural stem cells to ependymocytes, contributing to the regulation of stem cell quiescence and the balance between self-renewal and differentiation. In the peripheral nervous system, MMP-24 modulates interactions between nociceptive neurites and mast cells, participating in inflammatory hyperalgesia and peripheral thermal nociception. These functions position MMP-24 as a context-dependent regulator of neural circuitry, neuroinflammation, and stem cell niche maintenance.

Disease Relevance

Given its expression profile and substrate repertoire, MMP-24 has been studied in the context of neuropathic and inflammatory pain, brain tumor biology, and neural regeneration. Its capacity to remodel the perineuronal matrix and shed adhesion molecules makes it a candidate modulator of axonal growth and synaptic plasticity. Dysregulated MMP-24 activity may contribute to pathological pain sensitization and to the disruption of neural stem cell niches in disease states. Emerging evidence also implicates MT-MMPs broadly in tumor cell invasion, and MMP-24 expression has been reported in certain brain-derived tumor cell lines, though its precise oncogenic role remains an active area of investigation.

Gene & Protein Reference

Gene Symbol	MMP24

HGNC	7173
NCBI Gene ID (Human)	9described as 10893
NCBI Gene ID (Mouse)	17391
Ensembl	ENSG00000125966
OMIM	604767
UniProt (Human)	Q9Y5R2
UniProt (Mouse)	Q9WTQ2
Protein Family	Peptidase M10A (matrix metalloproteinase) family; membrane-type MMP (MT-MMP) subfamily
Predicted MW	~72 kDa (645 aa precursor, human); glycosylation and processing may shift apparent mass
Observed MW	~70–75 kDa (full-length); processed forms may appear lower on reducing SDS-PAGE
Chromosome	20q11.2
Paralogue	MMP25 (MT6-MMP) — closest paralogue; broader MMP family includes MMP14 (MT1-MMP), MMP15, MMP16, MMP17
Key Substrates	N-cadherin (CDH2), pro-MMP-2 (progelatinase A), dermatan sulfate proteoglycans, chondroitin sulfate proteoglycans, fibronectin (partial)
Activated by	Furin and related proprotein convertases (intracellular, trans-Golgi); autocatalytic processing also reported
Inhibited by	TIMP-2, TIMP-3 (endogenous tissue inhibitors of metalloproteinases); broad-spectrum hydroxamate MMP inhibitors (e.g., GM6001/ilomastat)

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