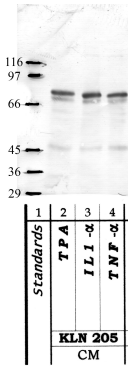
Anti-ADAMTS12 Rabbit Polyclonal Antibody

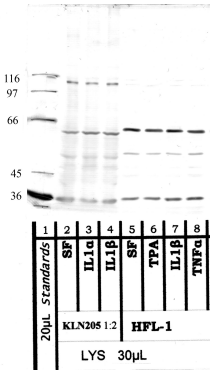
A disintegrin and metalloproteinase with thrombospondin motifs 12, ADAM-TS 12, ADAM-TS12, ADAMTS-12, EC 3.4.24.-,

Gene: ADAMTS12 **UniProt:** P58397 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

Product Image



Propeptide domain
RP1ADAMTS12



Metalloproteinase domain
RP2ADAMTS12

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

Actual Western blot validation for anti-ADAMTS12 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-ADAMTS12 Rabbit Polyclonal Antibody
Gene Symbol	ADAMTS12
Alternative Names	A disintegrin and metalloproteinase with thrombospondin motifs 12, ADAM-TS 12, ADAM-TS12, ADAMTS-12, EC 3.4.24.-,
UniProt ID	P58397
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-adamts-12-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of ADAMTS12. 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	**26–240** Region within the N-terminal propeptide domain of human ADAMTS12, downstream of the signal peptide cleavage site and upstream of the furin-recognition motif that borders the metalloproteinase domain; this domain maintains enzyme latency via a cysteine-switch mechanism and is removed upon activation by proprotein convertases	RP1ADAMTS12	In catalog
Metalloproteinase domain	**246–456** Region within the reprolysin-type metalloproteinase catalytic domain of human ADAMTS12, encompassing the zinc-binding HEXXH motif and the adjacent structural elements that form the substrate-binding cleft; this domain is conserved across the ADAMTS family and carries the proteolytic activity responsible for cleavage of aggrecan, COMP, and neurocan	RP2ADAMTS12	In catalog
—	**241–1594** Epitope spanning multiple domains of human ADAMTS12, covering regions from the propeptide through to the C-terminal thrombospondin type-1 repeat and spacer domains; this broad-coverage immunogen is suited to detecting both precursor and processed forms of the enzyme across diverse experimental contexts	RP-ADAMTS12	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

ADAMTS12 is a member of the ADAMTS (a disintegrin and metalloproteinase with thrombospondin motifs) family of secreted, zinc-dependent endopeptidases. The family is defined by a reprolysin-type metalloproteinase domain, a disintegrin-like domain, and one or more thrombospondin type-1 repeat (TSR) modules that mediate extracellular matrix (ECM) anchoring. Human ADAMTS12 encodes a 1,594-amino acid preproprotein (UniProt P58397) with a predicted molecular weight near 174 kDa. The enzyme is classified under EC 3.4.24.- and belongs to the aggrecanase/ADAMTS subgroup, sharing catalytic domain architecture with ADAMTS1, ADAMTS4, and ADAMTS5.

Expression & Localisation

ADAMTS12 is expressed in a broad range of tissues, with notable levels reported in skeletal muscle, small intestine, placenta, and fibroblastic cell types. The protein is synthesised as a preproprotein, secreted into the extracellular space, and associates non-covalently with the pericellular matrix via its TSR domains. Expression is dynamically regulated during development and can be induced by pro-inflammatory cytokines and growth factors. In adult tissues, ADAMTS12 transcript levels are relatively low at baseline but become markedly elevated in pathological conditions including fibrosis, inflammation, and certain malignancies.

Activation Mechanism

Like other ADAMTS family members, ADAMTS12 is synthesised with an N-terminal signal peptide and a prodomain containing a conserved cysteine that coordinates the catalytic zinc ion, maintaining latency via a cysteine-switch mechanism. Propeptide removal, required for enzyme activation, is carried out by furin-type proprotein convertases recognising a basic cleavage site (RXXR motif) at the prodomain–metalloproteinase domain junction. Cleavage can occur intracellularly in the trans-Golgi network or extracellularly. The mature, activated enzyme retains the disintegrin-like, cysteine-rich, spacer, and TSR domains C-terminal to the catalytic domain.

Key Substrates

ADAMTS12 cleaves a defined set of ECM macromolecules. Documented substrates include cartilage oligomeric matrix protein (COMP), aggrecan, and alpha-2-macroglobulin. Cleavage of COMP and aggrecan places ADAMTS12 among the proteinases relevant to cartilage homeostasis and osteoarthritis pathology, where uncontrolled aggrecan shedding contributes to articular cartilage erosion. ADAMTS12 also degrades neurocan, a chondroitin sulfate proteoglycan enriched in the central nervous system that regulates axon guidance, neural plasticity, and glial scar formation, extending the enzyme's physiological reach beyond connective tissue.

Disease Relevance

ADAMTS12 has documented roles in tumour biology, connective tissue remodelling, and reproductive physiology. The enzyme displays context-dependent anti-tumorigenic properties in some epithelial cancers, where its expression is epigenetically silenced, and loss of activity correlates with increased invasiveness. Conversely, ADAMTS12 expression is upregulated in certain fibrotic conditions and in the tumour microenvironment, where ECM remodelling facilitates disease progression. The enzyme is also expressed by extravillous trophoblasts during placentation, implicating it in uterine ECM remodelling required for successful implantation and spiral artery remodelling.

Inhibitor Profile

ADAMTS12 activity is subject to inhibition by members of the tissue inhibitor of metalloproteinases (TIMP) family. TIMP-3 is the principal endogenous inhibitor of multiple ADAMTS proteases and has been shown to inhibit ADAMTS12-mediated substrate cleavage. Alpha-2-macroglobulin serves a dual role as both a substrate and a broad-spectrum proteinase inhibitor capable of trapping active ADAMTS12. No highly selective small-molecule inhibitor of ADAMTS12 has been described to date, making well-characterised antibody reagents particularly useful for delineating ADAMTS12-specific contributions in complex biological systems.

Gene & Protein Reference

Gene Symbol	ADAMTS12
HGNC	ADAMTS12
NCBI Gene ID (Human)	81792
NCBI Gene ID (Mouse)	76965
Ensembl	ENSG00000197885
OMIM	606184
UniProt (Human)	P58397
UniProt (Mouse)	Q8K4G2
Protein Family	ADAMTS family; metzincin superfamily; zinc-dependent metalloproteinase
Predicted MW	~174 kDa (preproprotein); ~150 kDa (mature form, after signal peptide and propeptide removal)
Observed MW	~180–200 kDa (Western blot; glycosylation contributes to electrophoretic shift)
Chromosome	5q35.3
Paralogue	ADAMTS1, ADAMTS4, ADAMTS5 (aggrecanase subgroup); ADAMTS8 (closest structural paralogue)
Key Substrates	Aggrecan, COMP (cartilage oligomeric matrix protein), neurocan, alpha-2-macroglobulin
Activated by	Furin and furin-like proprotein convertases (intracellular/trans-Golgi); extracellular proteinase-mediated propeptide removal
Inhibited by	TIMP-3; alpha-2-macroglobulin (trapping mechanism)

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