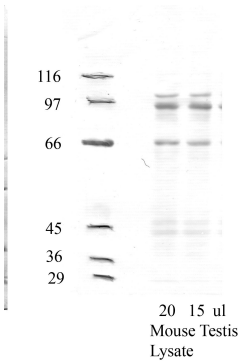
Anti-ADAM20 Rabbit Polyclonal Antibody

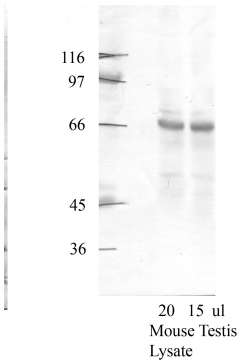
Disintegrin and metalloproteinase domain-containing protein 20, ADAM 20, EC 3.4.24.-,

Gene: ADAM20 **UniProt:** O43506 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

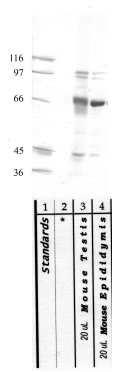
Product Image



Propeptide domain
RP1ADAM20



spacer region
RP2ADAM20



Second spacer region
RP3ADAM20

— Western Blot (3-panel validation across domain-specific antibody clones)

Actual Western blot validation for anti-ADAM20 rabbit polyclonal antibody. 3-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-ADAM20 Rabbit Polyclonal Antibody
Gene Symbol	ADAM20
Alternative Names	Disintegrin and metalloproteinase domain-containing protein 20, ADAM 20, EC 3.4.24.-,
UniProt ID	O43506
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-adam-20-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of ADAM20. 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	**32–206** Region within the N-terminal prodomain of ADAM-20, encompassing the cysteine-switch segment responsible for latency maintenance through coordination of the catalytic zinc ion; this domain is cleaved by furin-like convertases during zymogen activation and is absent from the mature surface-expressed proteinase	RP1ADAM20	In catalog
Spacer region	**~470–560** Region within the cysteine-rich/spacer segment of ADAM-20, situated downstream of the disintegrin-like domain and upstream of the EGF-like repeat; this region contributes to the stalk structure that positions the ectodomain relative to the cell surface and may modulate substrate accessibility	RP2ADAM20	In catalog
Second spacer region	**~561–630** Region within a second spacer/linker segment of ADAM-20 located between the EGF-like repeat and the transmembrane anchor, forming part of the juxtamembrane ectodomain stalk; this area is structurally distinct from the first spacer and may influence ectodomain orientation and potential regulatory interactions at the sperm plasma membrane	RP3ADAM20	In catalog
—	**207–726** Broad region spanning multiple structural domains of ADAM-20, including elements of the prodomain, metalloproteinase domain, disintegrin-like domain, cysteine-rich region, and spacer segments; suitable for applications requiring recognition of multiple epitopes across the ADAM-20 ectodomain architecture	RP-ADAM20	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

ADAM-20 (a disintegrin and metalloproteinase domain-containing protein 20) is a type I transmembrane metalloproteinase belonging to the ADAM family, a group of over 33 human paralogues that share a conserved multidomain architecture. ADAMs are defined by their prodomain, zinc-dependent metalloproteinase domain, disintegrin-like domain, cysteine-rich region, EGF-like repeat, transmembrane segment, and cytoplasmic tail. Classified under EC 3.4.24.-, ADAM-20 is phylogenetically grouped among the testis-enriched ADAMs, a subset that includes ADAM-21, ADAM-29, and ADAM-30, which are collectively implicated in mammalian reproductive biology rather than broad ectodomain shedding.

Expression & Localisation

ADAM-20 expression is highly restricted to testicular tissue, with transcript and protein levels detected predominantly in developing and mature spermatogenic cells. Within the testis, the protein localises to the plasma membrane of spermatocytes and spermatozoa. This tissue-specific expression pattern contrasts sharply with ubiquitously expressed family members such as ADAM-10 and ADAM-17, and is consistent with a specialised reproductive function. Limited or negligible ADAM-20 expression has been reported in somatic tissues, reinforcing its designation as a germ-cell-enriched proteinase.

Protein Architecture & Activation Mechanism

Like other ADAM family members, ADAM-20 is synthesised as a zymogen in which the N-terminal prodomain maintains latency through a conserved cysteine-switch mechanism. The cysteine residue in the prodomain coordinates the catalytic zinc ion, preventing premature metalloproteinase activity. Proprotein convertases of the furin family are predicted to cleave the prodomain at a conserved RXXR motif during transit through the trans-Golgi network, generating the mature, catalytically competent form. This processing step is a shared feature among the metzincin superfamily and is required for surface-displayed ADAM activity.

Substrates & Catalytic Function

The specific endogenous substrate repertoire of ADAM-20 has not been fully characterised. The presence of a zinc-binding HExxHxxGxxH motif within the metalloproteinase domain is consistent with endopeptidase activity against extracellular matrix or cell-surface proteins encountered during sperm transit or gamete interaction. The disintegrin-like domain is structurally homologous to snake venom disintegrins and can mediate integrin binding, suggesting ADAM-20 may participate in cell–cell recognition events relevant to fertilisation, including sperm–zona pellucida or sperm–egg plasma membrane interactions.

Disease Relevance & Reproductive Biology

Given its restricted expression in testicular tissue and proposed involvement in sperm maturation, ADAM-20 is a candidate gene for disorders of male fertility. Mutations or dysregulation of testis-enriched ADAMs have been associated with defects in sperm motility, morphology, and fertilisation capacity in both human and rodent studies. ADAM-20 is therefore of interest in the investigation of idiopathic male infertility, where molecular aetiology remains unresolved in a significant proportion of cases. Its potential utility extends to basic reproductive biology research and the development of non-hormonal contraceptive strategies targeting sperm-specific surface proteins.

Inhibitor Profile

No ADAM-20-specific endogenous inhibitor has been definitively characterised. Broad-spectrum metalloproteinase inhibitors, including hydroxamate-based compounds and tissue inhibitors of metalloproteinases (TIMPs), can suppress activity of ADAM family members in vitro, though selectivity for ADAM-20 specifically has not been established. TIMP-3 is the only TIMP reported to inhibit multiple membrane-anchored ADAMs with appreciable potency, and may represent a plausible inhibitor for ADAM-20 based on phylogenetic analogy, pending direct experimental confirmation.

Gene & Protein Reference

Gene Symbol	ADAM20
HGNC	ADAM20
NCBI Gene ID (Human)	8748
NCBI Gene ID (Mouse)	
Ensembl	ENSG00000177300
OMIM	603712
UniProt (Human)	O43506
UniProt (Mouse)	
Protein Family	ADAM (a disintegrin and metalloproteinase) family; metzincin superfamily
Predicted MW	~83 kDa (726 aa; signal peptide-cleaved mature form lower)
Observed MW	~80–90 kDa (variable with glycosylation)
Chromosome	14q24.1
Paralogue	ADAM21, ADAM29, ADAM30 (testis-enriched ADAM sub-group)
Key Substrates	Not fully characterised; predicted extracellular matrix or sperm-surface proteins involved in gamete interaction
Activated by	Furin/proprotein convertase cleavage of the prodomain (RXXR motif); cysteine-switch mechanism
Inhibited by	Broad-spectrum hydroxamate metalloproteinase inhibitors; TIMP-3 (predicted, by analogy with related membrane-anchored ADAMs)

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.