

# Anti-ADAM33 Rabbit Polyclonal Antibody

Disintegrin and metalloproteinase domain-containing protein 33, ADAM 33, EC 3.4.24.-,

**Gene:** ADAM33 **UniProt:** Q9BZ11 **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-ADAM33 Rabbit Polyclonal Antibody                                                                                    |
| Gene Symbol            | ADAM33                                                                                                                    |
| Alternative Names      | Disintegrin and metalloproteinase domain-containing protein 33, ADAM 33, EC 3.4.24.-,                                     |
| UniProt ID             | Q9BZ11                                                                                                                    |
| 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-33-rabbit-polyclonal-antibody                                                          |

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of ADAM33. 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  | <b>30–203</b><br>Region within the prodomain of human ADAM33, which maintains enzyme latency via the cysteine-switch mechanism; this segment lies between the signal peptide and the catalytic metalloprotease domain, upstream of the conserved HEXGH zinc-binding motif                      | RP1ADAM33 | In catalog |
| Aminoterminal end  | <b>204–254</b><br>Region spanning the aminoterminal portion of the ADAM33 precursor protein, encompassing the signal peptide and the N-terminal flank of the prodomain, prior to the core cysteine-switch regulatory segment                                                                   | RP2ADAM33 | In catalog |
| Cytoplasmic domain | <b>723–813</b><br>Region within the short cytoplasmic tail of human ADAM33, located intracellularly downstream of the single-pass transmembrane helix; this segment is implicated in intracellular trafficking and potential signaling interactions                                            | RP3ADAM33 | In catalog |
| —                  | <b>204–813</b><br>Broad region spanning multiple extracellular domains of human ADAM33, including portions of the prodomain, metalloprotease domain, disintegrin domain, and cysteine-rich region, providing reactivity across the principal functional ectodomain architecture of the protein | RP-ADAM33 | 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

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### Family & General Biology

ADAM33 is a member of the ADAM (a disintegrin and metalloproteinase) family, a large group of multidomain, zinc-dependent metalloproteinases that regulate cell-cell and cell-matrix interactions through ectodomain shedding of membrane-bound substrates. Like other ADAMs, ADAM33 is synthesized as an inactive zymogen and carries a characteristic domain architecture: signal peptide, prodomain, metalloprotease domain, disintegrin domain, cysteine-rich domain, EGF-like domain, transmembrane domain, and cytoplasmic tail. The family broadly governs processes including inflammation, development, and tissue remodeling.

### Expression & Localisation

ADAM33 expression is largely restricted to mesenchymal cell lineages. It is most prominently expressed in bronchial smooth muscle cells, fibroblasts, and myofibroblasts of the airway wall, with lower levels detected in vascular smooth muscle cells. Expression has also been reported in lung, brain, and placental tissue. At the subcellular level, ADAM33 is a type I transmembrane protein anchored at the plasma membrane, though soluble ectodomain fragments—generated by autoshedding or trans-shedding—are detectable in extracellular compartments, including bronchoalveolar lavage fluid.

### Activation Mechanism

ADAM33 is translated as a latent zymogen in which the prodomain maintains enzyme latency via a cysteine-switch mechanism: a conserved cysteine residue in the propeptide coordinates the active-site zinc ion, blocking substrate access. Prodomain removal, which can occur through autocatalytic processing or via furin-type proprotein convertases acting on a conserved RXXR motif, releases the active metalloprotease domain. Membrane-anchored ADAM33 can also undergo ectodomain shedding to release a soluble, catalytically competent form, and this soluble isoform has been associated with distinct pathological activities in airway tissue.

### Key Substrates & Signaling

ADAM33 functions as a sheddase for several cell-surface proteins, including kit ligand (KITLG/SCF), releasing soluble forms capable of modulating downstream receptor tyrosine kinase signaling. In vascular smooth muscle cells, ADAM33 activity sustains a proliferative phenotype by promoting PI3K/AKT and ERK1/2 signaling. The enzyme also influences cytokine secretion and adhesion molecule activity, contributing to the paracrine environment of remodeling airway tissue. These substrate relationships position ADAM33 at the intersection of growth factor signaling, vascular biology, and inflammatory mediator release.

### Inhibitor Profile

As a metzincin metalloprotease, ADAM33 is sensitive to broad-spectrum hydroxamate-based metalloprotease inhibitors such as marimastat and GM6001, which chelate the catalytic zinc ion. Tissue inhibitors of metalloproteinases (TIMPs), particularly TIMP-3, have been shown to inhibit ADAM family members and are likely relevant to ADAM33 regulation in tissue contexts, although inhibitor selectivity profiles among ADAMs vary. Endogenous regulation of ADAM33 activity in vivo is also influenced by prodomain re-association and, potentially, by the availability of shedding-competent membrane complexes.

### Disease Relevance

ADAM33 was identified through positional cloning as a susceptibility gene for asthma and bronchial hyperresponsiveness, with multiple single-nucleotide polymorphisms in the ADAM33 locus associated with asthma risk and lung function decline in

multiple independent populations. The soluble ectodomain of ADAM33 has been detected at elevated levels in the airways of asthmatic patients and has been implicated in subepithelial fibrosis, angiogenesis, and airway remodeling independent of inflammatory cell infiltration. Beyond asthma, ADAM33 has been explored in the context of chronic obstructive pulmonary disease (COPD) and vascular smooth muscle cell biology, where its proliferative and migratory effects may contribute to structural airway and vascular changes.

Gene & Protein Reference

|                      |                                                                                                                                            |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Gene Symbol          | ADAM33                                                                                                                                     |
| HGNC                 | HGNC:14175                                                                                                                                 |
| NCBI Gene ID (Human) | 80332                                                                                                                                      |
| NCBI Gene ID (Mouse) | 226845                                                                                                                                     |
| Ensembl              | ENSG00000134086                                                                                                                            |
| OMIM                 | 607114                                                                                                                                     |
| UniProt (Human)      | Q9BZ11                                                                                                                                     |
| UniProt (Mouse)      | Q8CGR3                                                                                                                                     |
| Protein Family       | ADAM (a disintegrin and metalloproteinase) family; metzincin superfamily                                                                   |
| Predicted MW         | ~90 kDa (full-length precursor, 813 aa)                                                                                                    |
| Observed MW          | ~90 kDa (full-length); soluble ectodomain fragments ~55–65 kDa reported by Western blot                                                    |
| Chromosome           | 20p13                                                                                                                                      |
| Paralogue            | ADAM32, ADAM28 (closest family members on chromosome 20)                                                                                   |
| Key Substrates       | Kit ligand (KITLG/SCF); additional type I transmembrane ectodomain substrates (characterisation ongoing)                                   |
| Activated by         | Furin/proprotein convertase cleavage of prodomain; autocatalytic processing; ectodomain shedding releases soluble active form              |
| Inhibited by         | Hydroxamate metalloprotease inhibitors (e.g., marimastat, GM6001); TIMP-3 (endogenous); prodomain cysteine-switch mechanism (latent state) |

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.