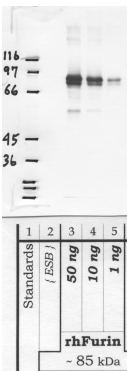


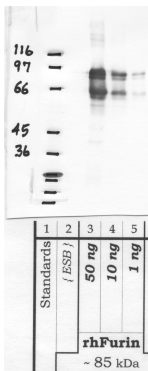
Anti-FURIN Rabbit Polyclonal Antibody

Furin, EC 3.4.21.75, Dibasic-processing enzyme, Paired basic amino acid residue-cleaving enzyme, PACE,
Gene: FURIN **UniProt:** P09958 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

Product Image



Amino end mature enzyme
RP1Furin



Homo-B domain
RP2Furin

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

Actual Western blot validation for anti-FURIN 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-FURIN Rabbit Polyclonal Antibody
Gene Symbol	FURIN
Alternative Names	Furin, EC 3.4.21.75, Dibasic-processing enzyme, Paired basic amino acid residue-cleaving enzyme, PACE,
UniProt ID	P09958
Host Species	Rabbit
Clonality	Polyclonal (pAb)
Isotype	IgG
Concentration	1mg/ml
Purity	Affinity purified
Pack Size	100ug
Validated Application	WB, IHC
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-furin-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of FURIN. 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
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Amino end mature enzyme	108–158 Region at the amino-terminal end of the mature furin enzyme, immediately downstream of the prodomain cleavage site (~Arg107), within the N-terminal portion of the subtilisin-like catalytic domain and proximal to the catalytic triad residues; this region becomes solvent-exposed following prodomain release in the TGN	RP1Furin	In catalog
Homo-B domain	~599–672 Region within the homo-B (P-domain) of human furin, located C-terminal to the subtilisin-like catalytic domain and upstream of the cysteine-rich transmembrane-proximal region; the P-domain is required for enzyme stability, calcium coordination, and optimal presentation of substrates to the active site	RP2Furin	In catalog
—	108–794 Broad immunogen spanning from the amino-terminal boundary of the mature enzyme (post-prodomain cleavage) through the subtilisin-like catalytic domain and the homo-B (P-domain), providing reactivity across multiple structural regions of the soluble ectodomain of human furin	RP-Furin	In catalog

Applications & Recommended Dilutions

App.	Species	Dilution Range	Notes
WB	Validated- Human Potenti al-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

Furin (PCSK3; EC 3.4.21.75) is the prototypical member of the proprotein convertase subtilisin/kexin (PCSK) family, a group of calcium-dependent serine endoproteases responsible for the limited proteolytic activation of secretory precursor proteins. The 794-residue type I transmembrane protein shares structural homology with bacterial subtilisins and contains a signal peptide, an autoinhibitory prodomain, a subtilisin-like catalytic domain, a P-domain (homo-B domain), and a cysteine-rich region, followed by a transmembrane anchor and a cytoplasmic tail. Furin recognizes the consensus cleavage motif R-X-(K/R)-R↓, acting within the constitutive secretory pathway to generate mature, biologically active proteins.

Expression & Subcellular Localisation

Furin is ubiquitously expressed across mammalian tissues, with the highest transcript and protein levels reported in liver, kidney, salivary gland, and intestinal epithelium. At the subcellular level, furin cycles dynamically between the trans-Golgi network (TGN), the cell surface, and early/late endosomes. Cytoplasmic tail sorting signals, including acidic-cluster and di-leucine motifs, direct this itinerary and ensure that furin encounters a broad range of substrates across multiple pH environments. A proportion of furin is also shed as a soluble, truncated form into the extracellular milieu, where it retains enzymatic activity.

Activation Mechanism & Regulation

Furin undergoes obligatory intramolecular autocleavage of its inhibitory prodomain in the endoplasmic reticulum, a prerequisite for proper folding and emergence of catalytic competence. A second cleavage at a downstream site within the prodomain, occurring in the acidic compartments of the TGN, releases the prodomain entirely and yields the fully active enzyme. Residual prodomain fragments can act as competitive inhibitors, adding a pH-dependent regulatory layer. Activity is also modulated by calcium occupancy at the catalytic site and by substrate-access control exerted through the P-domain, which is essential for stability and optimal substrate positioning.

Key Substrates & Physiological Roles

The substrate repertoire of furin encompasses growth factors, cytokines, receptors, adhesion molecules, and matrix-remodelling enzymes. Well-documented substrates include pro-TGF-β1, pro-BMP-4, pro-nerve growth factor, pro-PDGF-A/B, IGF-1 receptor, N-cadherin, membrane-type matrix metalloproteinases (MT-MMPs), and the V-ATPase accessory subunit ATP6AP1/Ac45, which regulates dense-core secretory granule acidification. Furin also activates pro-BNP to yield the mature cardiac hormone BNP(1-32), placing it in cardiovascular homeostasis. The breadth of substrates underscores furin's role as a master switch in the secretory pathway.

Disease Relevance & Pathogen Processing

Furin processes the envelope glycoproteins of numerous clinically important pathogens. HIV-1 gp160 cleavage to gp120/gp41, highly pathogenic influenza hemagglutinin (H5 and H7 subtypes) processing, and cleavage of the SARS-CoV-2 spike protein at the S1/S2 boundary are among the best-characterised examples. In oncology, furin is overexpressed in several tumour types and contributes to malignant progression through constitutive activation of MT-MMPs, growth factor receptors, and TGF-β signalling. In cardiovascular disease, aberrant furin-mediated processing drives fibrosis and maladaptive remodelling. These connections make furin a validated therapeutic target, and pharmacological inhibitors of furin are under active investigation.

Inhibitor Profile

Furin activity is suppressed by the serpin α1-PDX (a variant of α1-antitrypsin engineered to carry a furin-reactive reactive-centre loop), by the naturally occurring inhibitor α2-macroglobulin, and by several synthetic peptide-based or small-molecule peptidomimetic inhibitors that exploit the P4–P1 basic residue requirement. Protein-based inhibitors derived

from the prodomain itself also block furin in a competitive fashion. Among endogenous regulators, PACE4 and PC7—paralogue convertases—share overlapping but distinct substrate specificities, and their relative expression levels can modulate the net processing capacity of a given cell type toward shared substrates.

Gene & Protein Reference

Gene Symbol	FURIN
HGNC	HGNC:4046
NCBI Gene ID (Human)	5045
NCBI Gene ID (Mouse)	18550
Ensembl	ENSG00000140564
OMIM	136950
UniProt (Human)	P09958
UniProt (Mouse)	P23388
Protein Family	Proprotein convertase subtilisin/kexin (PCSK) family; S8 serine protease clan
Predicted MW	~95 kDa (unprocessed precursor); ~90 kDa (mature membrane-bound form)
Observed MW	~100–110 kDa by SDS-PAGE (glycosylated); soluble shed form ~98 kDa
Chromosome	15q26.1 (human)
Paralogue	PCSK5 (PC5/6), PCSK6 (PACE4), PCSK7 (PC7), PCSK1 (PC1/3), PCSK2 (PC2)
Key Substrates	Pro-TGF-β1, pro-BMP-4, pro-NGF, pro-PDGF-A/B, IGF-1 receptor, N-cadherin, MT1-MMP (MMP-14), MT2-MMP (MMP-15), ATP6AP1/Ac45, pro-BNP, HIV gp160, influenza HA (H5/H7), SARS-CoV-2 spike (S1/S2 site)
Activated by	Autocatalytic prodomain cleavage (ER and TGN); calcium binding; acidic pH in TGN/endosomes
Inhibited by	α1-PDX (engineered serpin), α2-macroglobulin, prodomain-derived competitive inhibitors, peptidomimetic inhibitors (dec-RVKR-cmk and analogues)

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.