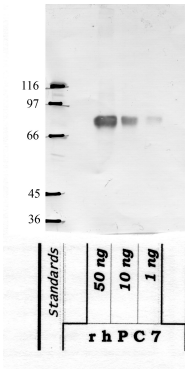
Anti-PCKS7 Rabbit Polyclonal Antibody

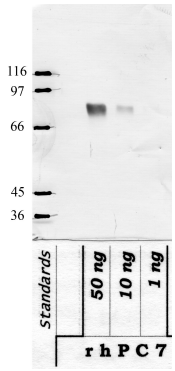
Proprotein convertase subtilisin/kexin type 7 EC 3.4.21.-, Lymphoma proprotein convertase, Prohormone convertase 7, Proprotein convertase 7, PC7, Proprotein convertase 8, PC8, hPC8, Subtilisin/kexin-like protease PC7,

Gene: PCKS7 **UniProt:** Q16549 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

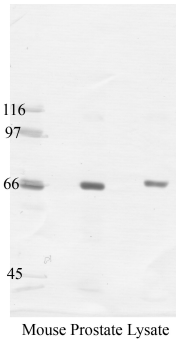
Product Image



Amino end mature protein
RP1PC7



P-Domain
RP2PC7



cytoplasmic domainÂ
RP3PC7

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

Actual Western blot validation for anti-PCKS7 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-PCKS7 Rabbit Polyclonal Antibody
Gene Symbol	PCKS7
Alternative Names	Proprotein convertase subtilisin/kexin type 7 EC 3.4.21.-, Lymphoma proprotein convertase, Prohormone convertase 7, Proprotein convertase 7, PC7, Proprotein convertase 8, PC8, hPC8, Subtilisin/kexin-like protease PC7,
UniProt ID	Q16549
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-pc-7-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of PCKS7. 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

Amino end mature protein	**142–192** Region within the N-terminal portion of the mature PC-7 protein, immediately downstream of the autocatalytically removed prodomain cleavage site and at the beginning of the subtilisin-like catalytic domain; this segment is exposed following prodomain dissociation and is surface-accessible on the processed enzyme	RP1PC7	In catalog
P-Domain	**~470–600** Region spanning the P-domain (middle domain) of PC-7, a conserved eight-stranded beta-barrel module positioned C-terminal to the subtilisin-like catalytic domain; the P-domain contributes to enzyme stability, calcium binding, and substrate presentation, and is characteristic of the proprotein convertase family	RP2PC7	In catalog
cytoplasmic domainÂ	**689–785** Region encompassing the short cytoplasmic tail of PC-7, located C-terminal to the single transmembrane anchor; this segment contains sorting determinants that direct the enzyme's trafficking between the trans-Golgi network, endosomes, and the plasma membrane	RP3PC7	In catalog
—	**142–785** Broad region spanning multiple domains of the mature PC-7 ectodomain, encompassing portions of the subtilisin-like catalytic domain, the P-domain, and the Cys-rich domain; antibodies raised against this extended region are expected to recognise multiple epitopes across the soluble ectodomain of the processed enzyme	RP-PC7	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

Proprotein convertase subtilisin/kexin type 7 (PCSK7; PC-7; PC8) is a member of the proprotein convertase (PC) family of calcium-dependent serine endoproteases, which comprises nine mammalian enzymes related to bacterial subtilisin and yeast kexin. PC-7 is the most distantly related member of the seven basic-amino-acid-cleaving convertases — PC1/3, PC2, furin, PC4, PACE4, PC5/6, and PC-7 — and occupies its own phylogenetic branch within the family. Like other PCs, it cleaves precursor proteins C-terminally at paired basic residue motifs conforming broadly to the consensus (K/R)Xn(K/R)↓, with PC-7 displaying particular selectivity for RXXX[K/R]R sites.

Protein Architecture & Post-translational Maturation

The 785-amino-acid human PC-7 precursor (UniProt Q16549; ~89 kDa predicted) is organised into an N-terminal signal peptide, a prodomain, a subtilisin-like catalytic domain, a P-domain (middle domain), a Cys-rich domain, a transmembrane anchor, and a short cytoplasmic tail. The prodomain acts as an intramolecular chaperone and inhibitor; it is removed by autocatalytic cleavage in the endoplasmic reticulum, producing a prodomain–mature enzyme complex that dissociates as the zymogen transits the secretory pathway. Full catalytic competence is acquired in the mildly acidic environment of the trans-Golgi network or downstream compartments, where the residual inhibitory prodomain is released or degraded.

Expression & Subcellular Localisation

PC-7 mRNA and protein are broadly expressed across human tissues, with notably high levels in the liver, brain, skeletal muscle, and lymphoid tissues. Unlike furin, whose expression is ubiquitous and regulated by multiple promoters, PC-7 transcription is driven by a single promoter with distinct regulatory elements. At the subcellular level, PC-7 is predominantly a type I transmembrane protein of the trans-Golgi network (TGN), though it also cycles through the endosomal–lysosomal system and the cell surface. This TGN-predominant localisation places PC-7 primarily in the constitutive secretory pathway, distinguishing it from regulated secretory pathway convertases such as PC1/3 and PC2.

Key Substrates & Enzymatic Activity

PC-7 processes a range of biomedically relevant precursors. Documented substrates include pro-brain-derived neurotrophic factor (pro-BDNF), the transferrin receptor 1 (TfR1), the anthrax toxin receptor TEM8/ANTXR1, and several viral envelope glycoproteins, consistent with its location in the late secretory and endosomal compartments. PC-7 also contributes to coagulation cascade regulation through processing of coagulation factor precursors. In the context of iron homeostasis, PC-7 cleaves TfR1 to generate soluble TfR fragments. Enzymatic activity requires Ca^{2}■ and is sensitive to active-site-directed serine protease inhibitors; the enzyme is not substantially inhibited by α2-macroglobulin under physiological conditions.

Inhibitor Profile

PC-7 activity is inhibited by the general serine protease inhibitor PMSF and by peptide-based chloromethylketone inhibitors targeting the subtilisin-like active site. Among protein inhibitors, the serpin α1-antitrypsin Portland variant (α1-PDX) and prosegment-based inhibitors suppress PC-7 activity in vitro, though with lower potency than observed against furin. Small-molecule PC inhibitors with multi-convertase activity — including certain polyarginine and decanoyl-RVKR-CMK compounds — also inhibit PC-7. Notably, PC-7 is not a known substrate or target of the tissue inhibitors of metalloproteinases

(TIMPs), as it belongs to the serine rather than metalloproteinase superfamily.

Disease Relevance

PC-7 has been implicated in several disease contexts. Its ability to process viral envelope glycoproteins — including those of Ebola, influenza, and HIV — identifies it as a host factor relevant to viral pathogenesis. In oncology, PC-7 (originally termed lymphoma proprotein convertase) was first cloned from a lymphoma cell line, and elevated PC-7 expression has been reported in certain cancers, suggesting a role in tumour-associated proteolytic remodelling. PC-7's regulation of TfR1 processing links it to iron metabolism, with potential implications for anaemia and iron-overload disorders. Collectively, these roles make PCSK7 a target of interest in virology, oncology, and metabolic disease research.

Gene & Protein Reference

Gene Symbol	PCKS7
HGNC	PCSK7
NCBI Gene ID (Human)	9159
NCBI Gene ID (Mouse)	18552
Ensembl	ENSG00000121879
OMIM	604874
UniProt (Human)	Q16549
UniProt (Mouse)	P98069
Protein Family	Subtilisin-like proprotein convertase (S8A serine protease) family; PCSK subfamily
Predicted MW	~89 kDa (785 aa precursor); mature catalytic form ~68–72 kDa
Observed MW	~70–75 kDa (Western blot, variable with glycosylation)
Chromosome	11q23.3
Paralogue	Furin (FURIN/PCSK3), PCSK5 (PC5/6), PCSK6 (PACE4)
Key Substrates	Pro-BDNF, Transferrin receptor 1 (TfR1), TEM8/ANTXR1, viral envelope glycoproteins (Ebola GP, influenza HA), coagulation factor precursors
Activated by	Autocatalytic intramolecular cleavage (prodomain removal); mildly acidic pH of the trans-Golgi network/endosomal compartments; Ca^{2}■-dependent
Inhibited by	PMSF, decanoyl-RVKR-CMK (peptide chloromethylketone), α1-antitrypsin Portland variant (α1-PDX), prosegment-based inhibitors

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.