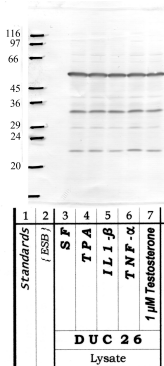


Anti-KLK10 Rabbit Polyclonal Antibody

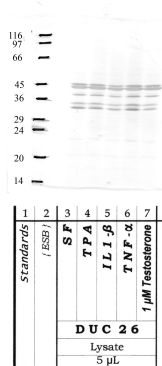
Kallikrein-10 EC 3.4.21.-, Normal epithelial cell-specific 1, Protease serine-like 1,

Gene: KLK10 **UniProt:** O43240 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

Product Image



Kallikrein loop
RP1Kallikrein10



Catalytic domain
RP2Kallikrein10

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

Actual Western blot validation for anti-KLK10 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-KLK10 Rabbit Polyclonal Antibody
Gene Symbol	KLK10
Alternative Names	Kallikrein-10 EC 3.4.21.-, Normal epithelial cell-specific 1, Protease serine-like 1,
UniProt ID	O43240
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, 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-kallikrein-10-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of KLK10. 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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Kallikrein loop	~179–200 Region spanning the kallikrein loop of the mature KLK10 protease domain—a surface-exposed insertion unique to tissue kallikreins that lies between the fifth and sixth beta-strands of the S1-fold and contributes to substrate specificity and family-level antigenicity	RP1Kallikrein10	In catalog
Catalytic domain	47–274 Region encompassing the core trypsin-fold catalytic domain of mature KLK10, including the conserved His-Asp-Ser catalytic triad residues and the substrate-binding pocket, bounded by the signal/propeptide cleavage site proximally and the C-terminal extension distally	RP2Kallikrein10	In catalog
—	31–276 Broad region covering the full-length mature KLK10 protein from the post-signal-peptide N-terminus through the C-terminus, encompassing the propeptide, the catalytic serine protease domain, and the kallikrein loop; suitable for detection of multiple epitopes across the full-length protein	RP-Kallikrein10	In catalog

Applications & Recommended Dilutions

App.	Species	Dilution Range	Notes
WB	Validated-Human Potential-Mouse, 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

Kallikrein-10 (KLK10) is a secreted serine protease and a member of the human tissue kallikrein family, which comprises 15 genes (KLK1–KLK15) clustered on chromosome 19q13.4—the largest contiguous cluster of protease genes in the human genome. Like other kallikreins, KLK10 belongs to the S1 family of chymotrypsin-like serine proteases and carries the canonical catalytic triad (His, Asp, Ser). It was originally identified by differential display as a gene specifically expressed in normal breast epithelium and subsequently downregulated in breast carcinoma, giving rise to the early designation NES1 (normal epithelial cell-specific 1).

Expression & Localisation

KLK10 is expressed in a broad range of normal epithelial tissues, including breast, prostate, ovary, testis, colon, and skin. Expression is predominantly associated with the ductal and glandular epithelium of these tissues. As a secreted glycoprotein, KLK10 is processed through the classical secretory pathway and released into the extracellular space, where it can act on substrates within the pericellular matrix and on adjacent cell surfaces. Circulating KLK10 has been detected in serum and biological fluids, motivating investigation of its utility as a tissue-derived biomarker in oncological settings.

Zymogen Activation

KLK10 is synthesised as a 276-amino acid preproenzyme. Removal of the N-terminal signal peptide yields the proenzyme, which requires proteolytic cleavage of a short propeptide to generate the mature, catalytically active form. Within the kallikrein network, activation occurs through a protease cascade in which upstream kallikreins and other serine proteases reciprocally activate one another. The active enzyme displays trypsin-like or chymotrypsin-like substrate specificity depending on context, and retains the highly conserved kallikrein loop—a surface-exposed structural element that distinguishes tissue kallikreins from other S1-family proteases and contributes to substrate selectivity.

Key Substrates & Inhibitors

Desmoglein-3, a desmosomal cadherin central to cell–cell adhesion, has been identified as a KLK10 substrate, linking the enzyme to desmosomal remodelling and epithelial integrity. KLK10 has also been reported to cleave extracellular matrix components and to participate in the broader kallikrein-kinin cascade. Endogenous inhibition is mediated by members of the serine protease inhibitor (serpin) superfamily, particularly the kallikrein-inhibiting serpins such as LEKTI (encoded by SPINK5), which regulates kallikrein activity in epithelial barrier tissues. Alpha-2-macroglobulin provides a broader, non-specific inhibitory mechanism in the extracellular compartment.

Epigenetic Silencing & Tumour-Suppressor Activity

KLK10 expression is frequently silenced in epithelial malignancies through promoter CpG island hypermethylation—an epigenetic mechanism documented in breast, prostate, cervical, ovarian, and colorectal cancers. Restoration of KLK10 expression in cancer cell lines reduces proliferation and anchorage-independent growth, consistent with tumour-suppressor activity. The contrast between its downregulation at the primary tumour site and its reported elevation in serum of some cancer patients reflects complex post-translational processing and secretion dynamics that complicate straightforward biomarker interpretation.

Disease Relevance & Biomarker Potential

Given its differential expression between normal and malignant epithelium, KLK10 has attracted sustained interest as a cancer biomarker. Elevated KLK10 levels in serum and ascites fluid have been associated with ovarian and pancreatic cancer, while reduced tissue expression correlates with malignant transformation in breast and prostate. The enzyme's involvement in desmosomal remodelling, skin barrier function, and the broader kallikrein protease network positions it at the intersection of tissue homeostasis and cancer biology, making it a relevant target for antibody-based studies across immunohistochemistry, Western blot, and related applications.

Gene & Protein Reference

Gene Symbol	KLK10
HGNC	6362
NCBI Gene ID (Human)	5655
NCBI Gene ID (Mouse)	259277
Ensembl	ENSG00000129116
OMIM	602673
UniProt (Human)	O43240
UniProt (Mouse)	Q9WU19
Protein Family	S1 family serine proteases; tissue kallikrein subfamily (KLK1–KLK15)
Predicted MW	~30 kDa (mature form); ~31.5 kDa (proenzyme)
Observed MW	~30–36 kDa (variable due to glycosylation)
Chromosome	19q13.4
Paralogue	KLK1, KLK3 (PSA), KLK4, KLK5, KLK6, KLK7
Key Substrates	Desmoglein-3; extracellular matrix components; additional kallikrein cascade substrates
Activated by	Upstream kallikrein cascade members (e.g. KLK5, KLK7); trypsin-like serine proteases
Inhibited by	LEKTI (SPINK5); alpha-2-macroglobulin; broad-spectrum serine protease inhibitors (e.g. PMSF, aprotinin)

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.