

Anti-Klk1b16 Rabbit Polyclonal Antibody

Kallikrein 1-related peptidase b16 EC 3.4.21.54, Gamma-renin, submandibular gland, Glandular kallikrein K16, mGK-16,

Gene: Klk1b16 **UniProt:** P04071 **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-Klk1b16 Rabbit Polyclonal Antibody
Gene Symbol	Klk1b16
Alternative Names	Kallikrein 1-related peptidase b16 EC 3.4.21.54, Gamma-renin, submandibular gland, Glandular kallikrein K16, mGK-16,
UniProt ID	P04071
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
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-16-mouse-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of Klk1b16. 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	~80–100 Region encompassing the kallikrein-specific surface loop (KLK loop) of mouse Klk1b16, a structurally distinctive insertion between two active-site-flanking beta-strands that is unique to the kallikrein subfamily within the trypsin-fold serine proteases and is surface-exposed in the folded enzyme	RP1Kallikrein1 6 mouse	In catalog
—	25–261 Broad region spanning the majority of the mature Klk1b16 serine protease domain, encompassing the N-terminal activation segment, the central beta-barrel core carrying the catalytic triad, the kallikrein-specific loop, and the C-terminal region of the chymotrypsin-fold protease domain	RP-Kallikrein16 mouse	In catalog

Applications & Recommended Dilutions

App.	Species	Dilution Range	Notes
WB	Validated-Human Potential	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

Klk1b16 (Kallikrein 1-related peptidase b16, also designated gamma-renin or mGK-16) is a member of the tissue kallikrein family of serine proteases, classified under EC 3.4.21.54. Tissue kallikreins are secreted trypsin- or chymotrypsin-like endopeptidases that cleave kininogen substrates to release vasoactive kinins. In rodents, the kallikrein gene family is substantially expanded relative to primates: the mouse Klk1b gene cluster on chromosome 7 encodes at least 25 closely

related paralogs arising from successive tandem duplications, of which Klk1b16 is one. This expansion is not mirrored in the human genome, where a single KLK1 gene serves the corresponding tissue kallikrein function.

Expression & Tissue Distribution

Klk1b16 expression is predominantly detected in the mouse submandibular gland, consistent with the salivary gland tropism shared by many Klk1b family members. Lower-level transcripts have been reported in kidney and other exocrine tissues in profiling studies, a pattern typical of glandular kallikreins. The protein is synthesised as a zymogen and directed into the secretory pathway; mature enzyme is detectable in salivary secretions and urine. The submandibular gland concentration of multiple kallikrein paralogs in rodents suggests a physiological role in the extensive proteolytic processing that occurs within this tissue’s secretory product.

Protein Architecture & Activation

Like all tissue kallikreins, Klk1b16 adopts a chymotrypsin-fold with the canonical catalytic triad His, Asp, Ser located in the active-site cleft. The mature 261-amino acid protease is generated by removal of a signal peptide and an N-terminal propeptide. A structurally distinctive surface loop — the so-called kallikrein loop (or kallikrein-specific loop, KLK loop) — is inserted between two beta-strands flanking the active site and is unique to the kallikrein subfamily relative to other trypsin-like proteases. Zymogen activation proceeds through limited proteolytic cleavage of the propeptide, a step that can be accomplished by other kallikreins or by trypsin-like proteases within the secretory compartment.

Substrates & Kallikrein-Kinin System

Tissue kallikreins, including the Klk1b family members, process low-molecular-weight kininogen to release Lys-bradykinin (kallidin), which signals through B1 and B2 bradykinin receptors to modulate vascular tone, renal sodium handling, and inflammatory cell recruitment. The designation gamma-renin was applied in early biochemical studies that observed renin-like activity in salivary gland extracts; subsequent characterisation indicated this reflected kinin-generating activity rather than true angiotensin precursor processing. Beyond kininogens, tissue kallikreins can process growth factors, neuropeptides, and extracellular matrix components, suggesting broader roles in local tissue homeostasis.

Regulation & Inhibitor Profile

Kallikrein-binding protein (KBP), a member of the serpin superfamily, is the principal endogenous inhibitor of tissue kallikreins and forms stable, essentially irreversible complexes with the active enzyme. Additional serpins, including alpha-1-antitrypsin and alpha-2-macroglobulin, can inhibit kallikrein activity in plasma. Zinc ions present in saliva provide a physiological brake on kallikrein activity within the submandibular gland lumen. Synthetic serine protease inhibitors such as aprotinin (BPTI) and PMSF suppress kallikrein activity in biochemical assays. The activity of Klk1b16 specifically is expected to follow this general kallikrein inhibitor profile, though dedicated inhibition studies remain limited.

Disease Relevance & Research Context

Dysregulation of the kallikrein-kinin system is implicated in hypertension, diabetic nephropathy, ischaemia-reperfusion injury, and inflammatory disease. Mouse models exploiting the expanded Klk1b cluster have been used to dissect tissue-specific kinin generation and its cardiovascular and renal consequences. Gamma-renin / Klk1b16 has attracted interest as a model for understanding the evolutionary diversification of protease specificity within a gene cluster. Researchers working on salivary gland biology, exocrine secretion, and protease network redundancy employ anti-Klk1b16 reagents to determine the spatial distribution and relative abundance of individual paralogs in complex tissue lysates and sections.

Gene & Protein Reference

Gene Symbol	Klk1b16
HGNC	N/A (mouse-specific gene; no direct human HGNC orthologue — closest human orthologue is KLK1)

NCBI Gene ID (Human)	N/A
NCBI Gene ID (Mouse)	16612
Ensembl	ENSMUSG00000063895
OMIM	N/A
UniProt (Human)	P04071
UniProt (Mouse)	P04071
Protein Family	Peptidase S1A (tissue kallikrein) family; Klk1b subfamily
Predicted MW	~28.5 kDa (mature form, after signal peptide and propeptide removal)
Observed MW	~30–35 kDa (SDS-PAGE; glycosylation may contribute to apparent shift)
Chromosome	Mouse chromosome 7 (Klk1b gene cluster)
Parologue	Klk1b1, Klk1b3, Klk1b4, Klk1b5, Klk1b8, Klk1b9, Klk1b11, Klk1b21, Klk1b22, Klk1b24, Klk1b26, Klk1b27 (and additional Klk1b cluster members)
Key Substrates	Low-molecular-weight kininogen (yielding Lys-bradykinin/kallidin); additional kallikrein family substrates include growth factors and neuropeptides
Activated by	Limited proteolytic cleavage of the N-terminal propeptide by trypsin-like proteases or other kallikreins
Inhibited by	Kallikrein-binding protein (KBP/serpin A4), alpha-1-antitrypsin, alpha-2-macroglobulin, aprotinin (BPTI), zinc ions, PMSF

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.