

Anti-SerpinB6 Rabbit Polyclonal Antibody

Serpin B6 Cytoplasmic antiproteinase, CAP, Peptidase inhibitor 6, PI-6, Placental thrombin inhibitor,

Gene: SerpinB6 **UniProt:** P35237 **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-SerpinB6 Rabbit Polyclonal Antibody
Gene Symbol	SerpinB6
Alternative Names	Serpin B6 Cytoplasmic antiproteinase, CAP, Peptidase inhibitor 6, PI-6, Placental thrombin inhibitor,
UniProt ID	P35237
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, Pig
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-serpin-b6-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of SerpinB6. 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 Serpin-B6	1–51 Region spanning the N-terminal portion of the mature Serpin-B6 polypeptide, encompassing the beginning of the serpin scaffold upstream of the main beta-sheet A framework; this region lies distal to the reactive center loop and is structurally accessible in the native cytoplasmic conformation	RP1SerpinB6	In catalog
Reactive Center Loop (RCL)	331–371 Region corresponding to the C-terminal reactive center loop (RCL) of Serpin-B6, which contains the scissile P1–P1' bond presented as a pseudosubstrate to target serine proteinases; this exposed loop undergoes the conformational stressed-to-relaxed transition upon covalent proteinase trapping	RP2SerpinB6	In catalog
—	1–376 Epitope distributed across the central serpin scaffold of Serpin-B6, spanning elements of beta-sheet A, helices D–F, and associated loop regions that form the conserved structural core shared across clade B ov-serpins; suitable for detection regardless of RCL cleavage state	RP-SerpinB6	In catalog

Applications & Recommended Dilutions

App.	Species	Dilution Range	Notes
WB	Validated-Human Potential-Mouse, Rat, Pan, Monkey, Dog, Pig	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

Serpin-B6 (UniProt P35237) is a 376-residue, ovalbumin-type (clade B) serine proteinase inhibitor that belongs to the intracellular branch of the serpin superfamily. Clade B serpins lack an N-terminal signal peptide and are therefore retained in the cytoplasm rather than secreted into the extracellular milieu. Like other ov-serpins, Serpin-B6 adopts the canonical stressed-to-relaxed conformational mechanism, presenting a reactive center loop (RCL) as a pseudosubstrate to its target proteinases. The protein is also known as cytoplasmic antiproteinase (CAP) and peptidase inhibitor 6 (PI-6).

Expression & Localisation

Serpin-B6 is expressed in a broad range of tissues, with particularly high levels documented in the inner ear (cochlea), brain, placenta, liver, and hematopoietic cells. Within cells it is predominantly cytoplasmic, consistent with its role in neutralizing proteinases that gain access to the cytosol during lysosomal membrane permeabilization or other stress events. Expression is also detected in epithelial cells of multiple organs, and transcript databases show moderate-to-high expression across neuronal and non-neuronal cell types. The protein has historically been identified in placental extracts, giving rise to the alternate name placental thrombin inhibitor (PTI).

Inhibitory Mechanism & Key Substrates

Serpin-B6 functions as a suicide-substrate inhibitor. Its RCL is presented to target proteinases; upon cleavage of the scissile bond, the serpin traps the enzyme in a covalent, irreversible acyl-intermediate complex, distorting the active site of the bound proteinase. Confirmed inhibitory targets include cathepsin G, kallikrein-8 (KLK8), and thrombin, with cathepsin G representing a particularly well-characterized cytoplasmic substrate. The protein has also been reported to inhibit chymotrypsin-like serine proteinases more broadly. This inhibitory breadth suggests a surveillance function against misdirected or leaked lysosomal and granule-associated proteinases.

Role in Auditory Function & Hearing Loss

Loss-of-function studies in mice and genetic analyses in human pedigrees have linked Serpin-B6 deficiency to sensorineural hearing loss classified as DFNB91. In the cochlea, Serpin-B6 is expressed in hair cells and supporting cells, where it is thought to protect against cytoplasmic proteinase activity that would otherwise trigger apoptotic cascades. Mouse knockouts of Serpinb6 develop progressive hearing loss accompanied by cochlear hair cell degeneration, and disruption of the Serpinb6a–GCH1 (GTP cyclohydrolase 1) axis has been proposed as a contributing mechanism to cochlear oxidative stress and damage.

Cancer Biology & Signalling Context

Beyond its canonical role as a proteinase inhibitor, Serpin-B6 expression is altered in multiple cancer types. In glioma, elevated Serpin-B6 has been associated with enhanced cell migration and invasion, with mechanistic studies pointing to involvement of the PI3K/AKT/mTOR signalling axis and promotion of epithelial-to-mesenchymal transition (EMT)-like programs. These observations position Serpin-B6 not merely as a passive inhibitor of proteinase activity but as a protein whose abundance can influence intracellular signalling outcomes. Its dysregulation has also been noted in colorectal and other carcinomas, making it a relevant marker in oncology-focused immunohistochemical panels.

Disease Relevance & Research Utility

The combination of Serpin-B6's roles in auditory physiology, neuronal homeostasis, and cancer biology makes it a target of broad research interest. Immunodetection of Serpin-B6 by Western blot enables assessment of expression levels across disease states, including hearing loss models, neurodegenerative conditions, and tumour tissue. Because the protein functions intracellularly, antibodies recognising cytoplasmic epitopes are appropriate for both denaturing (Western blot) and fixed-tissue (IHC, immunofluorescence) applications. Species cross-reactivity between human and mouse Serpin-B6/Serpinb6a is relevant for investigators using murine cochlear and neuronal models.

Gene & Protein Reference

Gene Symbol	SerpinB6
HGNC	HGNC:8943
NCBI Gene ID (Human)	5269
NCBI Gene ID (Mouse)	20724
Ensembl	ENSG00000197142
OMIM	210280
UniProt (Human)	P35237
UniProt (Mouse)	P97352
Protein Family	Serpin superfamily, clade B (ov-serpin / intracellular serpin)
Predicted MW	42.6 kDa
Observed MW	42–45 kDa (SDS-PAGE; slight variation by cell type)
Chromosome	6p25.2
Paralogue	SERPINB1, SERPINB3, SERPINB4 (clade B ov-serpins)
Key Substrates	Cathepsin G, Kallikrein-8 (KLK8), Thrombin, Chymotrypsin
Activated by	Not applicable — constitutively active inhibitor; no known zymogen activation step
Inhibited by	No endogenous protein inhibitor of Serpin-B6 currently established; inhibitory activity is substrate-dependent and modulated by RCL accessibility

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.