Anti-SerpinB2 Rabbit Polyclonal Antibody

Plasminogen activator inhibitor 2 PAI-2, Monocyte Arg-serpin, Placental plasminogen activator inhibitor, Serpin B2, Urokinase inhibitor,

Gene: SerpinB2 **UniProt:** P05120 **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-SerpinB2 Rabbit Polyclonal Antibody
Gene Symbol	SerpinB2
Alternative Names	Plasminogen activator inhibitor 2 PAI-2, Monocyte Arg-serpin, Placental plasminogen activator inhibitor, Serpin B2, Urokinase inhibitor,
UniProt ID	P05120
Host Species	Rabbit
Clonality	Polyclonal (pAb)
Isotype	IgG
Concentration	1mg/ml
Purity	Affinity purified
Pack Size	100ug
Validated Application	WB, IF
Recommended Dilution	WB-1/1000
Species Reactivity	Validated- Human Potential-Pan, Monkey
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-b2-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of SerpinB2. 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 PAI-2	**1–51** Region spanning the N-terminal segment of mature human SerpinB2, encompassing the early α-helices (helix A/B region) upstream of the large surface-exposed CD-loop, in the portion of the protein distal from the reactive center loop at the C-terminal end of the serpin fold	RP1SerpinB2	In catalog
Reactive Center Loop (RCL)	**370–410** Region within the reactive center loop (RCL) of human SerpinB2, containing the P1–P1′ scissile bond (Arg–Thr) that is presented to the active site of urokinase-type plasminogen activator; this loop undergoes irreversible insertion into β-sheet A upon protease trapping, making the native (non-inserted) RCL conformation the primary epitope target	RP2SerpinB2	In catalog
—	**1–415** Epitope(s) distributed across multiple structural domains of the full-length mature human SerpinB2 protein, spanning the N-terminal helical bundle, the central three-β-sheet (A/B/C) serpin scaffold, the large surface-exposed CD-loop (approximately residues 66–100), and the C-terminal reactive center loop region; suitable for detection of total SerpinB2 regardless of conformational state	RP-SerpinB2	In catalog

Applications & Recommended Dilutions

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

Protein Family & General Biology

SerpinB2, commonly designated PAI-2 (plasminogen activator inhibitor-2), is a member of the clade B (intracellular) branch of the serine protease inhibitor (serpin) superfamily encoded by SERPINB2 on chromosome 18q21.3. The protein comprises 415 amino acids and, like all serpins, adopts a stressed metastable conformation that undergoes a profound conformational rearrangement upon covalent complex formation with its target protease. Unlike most clade B serpins, SerpinB2 contains a large, surface-exposed loop (the CD-loop, residues ~66–100) of unknown function that is absent in structurally related family members such as SerpinB1 and SerpinB3.

Expression & Localisation

SerpinB2 is expressed predominantly in monocytes, macrophages, and trophoblastic cells of the placenta, with lower-level expression in keratinocytes, epithelial cells, and certain tumor-derived cell lines. Unlike PAI-1 (SerpinE1), which circulates after secretion by endothelial cells and platelets, SerpinB2 lacks a classical N-terminal signal peptide and is retained predominantly in the cytoplasm. A secreted, glycosylated form is produced under specific conditions—particularly during inflammatory stimulation—but the intracellular pool constitutes the dominant fraction. Expression is strongly induced by pro-inflammatory cytokines including LPS, TNF-α, and IL-1β, as well as by phorbol esters and during monocyte-to-macrophage differentiation.

Inhibitory Mechanism & Key Substrates

SerpinB2 functions as a suicide-substrate inhibitor. Its reactive center loop (RCL) presents the P1–P1′ scissile bond (Arg–Thr at approximately residues 380–381 of the mature protein) to the active-site serine of a target protease. Cleavage triggers the canonical serpin loop-insertion mechanism, covalently trapping the protease in a 1:1 stoichiometric complex and irreversibly inactivating it. The primary physiological target of SerpinB2 is urokinase-type plasminogen activator (uPA); inhibition of uPA suppresses conversion of plasminogen to plasmin, thereby attenuating extracellular matrix degradation and fibrinolysis. Tissue-type plasminogen activator (tPA) can be inhibited in vitro but at rates orders of magnitude lower than PAI-1.

Regulation & Protein–Protein Interactions

Intracellular SerpinB2 is not regulated by vitronectin binding, in contrast to PAI-1, which requires vitronectin for stabilization in its active conformation. SerpinB2 has been reported to interact with intracellular proteins including transglutaminase 2 (TG2), which cross-links SerpinB2 into high-molecular-weight complexes and may contribute to an anti-apoptotic role independent of protease inhibition. Additionally, SerpinB2 has been found to associate with the retinoblastoma protein (Rb), implicating it in cell cycle regulation. These non-canonical interactions suggest that SerpinB2 has intracellular functions extending beyond classical serine protease inhibition.

Disease Relevance

Elevated SerpinB2 expression has been documented in a range of pathological contexts. In oncology, high tumor-cell SerpinB2 expression has been correlated with improved prognosis in breast and colorectal cancers, an unusual observation for a protease inhibitor given that reduced proteolysis might be expected to limit invasion. Conversely, SerpinB2 has pro-tumorigenic associations in other cancer types, reflecting its complex, context-dependent biology. In inflammatory disease, SerpinB2 is a marker of monocyte/macrophage activation. During pregnancy, it is produced in high abundance by the placenta, and altered expression has been linked to complications including preeclampsia. Its role in controlling uPA-mediated plasminogen activation makes it relevant to thrombosis, wound healing, and tissue remodeling research.

Structural Considerations for Antibody Targeting

The mature SerpinB2 protein (following cleavage of the initiator methionine) retains the archetypal serpin fold: a central β-sheet A flanked by α-helices, with the RCL protruding from the C-terminal end of the molecule. The large, intrinsically disordered

CD-loop (approximately residues 66–100) and the N-terminal region (residues 1–50 of the mature form) are both surface-exposed and accessible in the native conformation, making them suitable epitope targets for antibody generation. After RCL cleavage and loop insertion, the N-terminal and CD-loop regions remain structurally distinct from those in the cleaved or latent forms, providing opportunities to discriminate conformational states by antibody selection.

Gene & Protein Reference

Gene Symbol	SerpinB2
HGNC	HGNC:8947
NCBI Gene ID (Human)	5055
NCBI Gene ID (Mouse)	18788
Ensembl	ENSG00000197912
OMIM	173390
UniProt (Human)	P05120
UniProt (Mouse)	P12388
Protein Family	Serpin superfamily, clade B (intracellular/ov-serpin)
Predicted MW	~47 kDa (non-glycosylated); ~60 kDa (glycosylated secreted form)
Observed MW	~47 kDa (intracellular form on SDS-PAGE); ~60 kDa (secreted glycosylated form)
Chromosome	18q21.3
Paralogue	SerpinB1, SerpinB3, SerpinB4 (clade B serpins); SerpinE1 (PAI-1, functionally related)
Key Substrates	Urokinase-type plasminogen activator (uPA); tissue-type plasminogen activator (tPA, low efficiency)
Activated by	LPS, TNF-α, IL-1β, phorbol esters, monocyte-to-macrophage differentiation signals
Inhibited by	No endogenous protein inhibitor identified; RCL cleavage by non-cognate proteinases can generate latent/cleaved non-inhibitory forms

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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