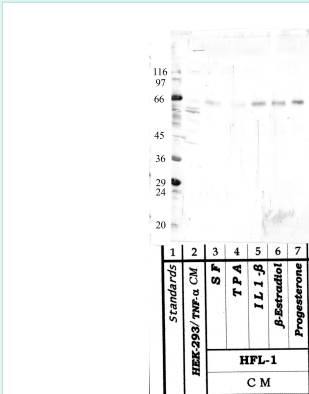


Anti-HTRA3 Rabbit Polyclonal Antibody

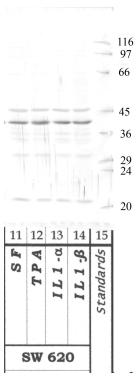
Serine protease HTRA3, EC 3.4.21.-, High-temperature requirement factor A3, Pregnancy-related serine protease,

Gene: HTRA3 **UniProt:** P83110 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

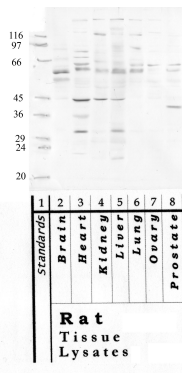
Product Image



Kazal-Like domain
RP1HTRA3



Catalytic domain
RP2HTRA3



PDZ domain
RP3HTRA3

— Western Blot (4-panel validation across domain-specific antibody clones)

Actual Western blot validation for anti-HTRA3 rabbit polyclonal antibody. 4-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-HTRA3 Rabbit Polyclonal Antibody
Gene Symbol	HTRA3
Alternative Names	Serine protease HTRA3, EC 3.4.21.-, High-temperature requirement factor A3, Pregnancy-related serine protease,
UniProt ID	P83110
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
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-htra-3-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of HTRA3. 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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Kazal-Like domain	64–128 Region within the N-terminal Kazal-like (insulin-growth-factor-binding protein, IGFBP) module of HTRA3, which precedes the trypsin-like serine protease domain and is thought to contribute to extracellular localisation and substrate or co-factor engagement	RP1HTRA3	In catalog
Catalytic domain	18–453 Region spanning the core trypsin-like serine protease domain of HTRA3, which houses the conserved His-Asp-Ser catalytic triad and the substrate-binding cleft responsible for proteolytic activity toward ECM substrates such as decorin and fibronectin	RP2HTRA3	In catalog
PDZ domain	359–444 Region within the C-terminal PDZ domain of HTRA3, which mediates substrate recognition through binding of C-terminal peptide motifs and allosterically regulates catalytic activity via conformational coupling to the protease domain L2 and L3 loops	RP3HTRA3	In catalog
Carboxyterminal end	403–453 Region at the extreme C-terminus of the HTRA3 PDZ domain, representing the distal end of the protein and a surface implicated in inter-subunit contacts within higher-order oligomeric assemblies	RP4HTRA3	In catalog
—	18–453 Broad region spanning from the N-terminal portion of the serine protease domain through to the C-terminal PDZ domain, covering the majority of the mature HTRA3 protein and suitable for general detection applications across multiple structural regions	RP-HTRA3	In catalog

Applications & Recommended Dilutions

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

HTRA3 belongs to the HtrA (high-temperature requirement factor A) serine protease family, a conserved group of ATP-independent proteases characterised by a trypsin-like catalytic domain coupled to one or more C-terminal PDZ domains. Four human paralogues exist—HTRA1, HTRA2, HTRA3, and HTRA4—each with distinct subcellular localisation and substrate repertoires. Unlike HTRA2, which is predominantly mitochondrial, HTRA3 is secreted into the extracellular space. The catalytic triad (His, Asp, Ser) is fully conserved, and substrate access is regulated allosterically through conformational changes in the PDZ domain and oligomeric state.

Expression & Localisation

HTRA3 is expressed in a broad range of tissues including placenta, ovary, uterus, lung, kidney, heart, and skeletal muscle, with particularly prominent expression at the maternal–fetal interface during early gestation. Within the placenta, HTRA3 protein is detected in extravillous trophoblasts and decidual stromal cells. Expression is also documented in granulosa cells of the developing follicle and in luteinised cells of the corpus luteum. HTRA3 protein is secreted and accumulates in the extracellular matrix, where it acts locally on matrix substrates. Alternative splicing produces a long form (~51 kDa) and a short form (~34 kDa) that lacks the PDZ domain.

Activation Mechanism & Structural Regulation

Like other HtrA family members, HTRA3 activity is regulated through oligomerisation. The enzyme exists in low-activity monomeric or dimeric forms and assembles into higher-order oligomers—trimers and hexamers—that display substantially elevated proteolytic activity. The C-terminal PDZ domain contributes to substrate engagement and allosteric activation: binding of C-terminal peptide motifs of substrate or PDZ ligands induces conformational rearrangements in the L2 and L3 regulatory loops that remodel the substrate-binding cleft. The short isoform, which lacks the PDZ domain, retains catalytic residues but exhibits altered substrate selectivity and reduced regulatory capacity.

Key Substrates & Signalling Roles

HTRA3 cleaves extracellular matrix proteoglycans including decorin, biglycan, and fibronectin, as well as the model substrate beta-casein. Through degradation of decorin and biglycan—both of which sequester TGF- β ligands within the matrix—HTRA3 modulates TGF- β bioavailability and downstream SMAD signalling. HTRA3 has also been shown to interact with and antagonise TGF- β family signalling more directly. These substrate interactions position HTRA3 as a regulator of extracellular matrix homeostasis, growth factor release, and cell–matrix communication in tissues undergoing remodelling.

Reproductive Biology

HTRA3 expression rises markedly in first-trimester placenta and is downregulated as gestation advances, a temporal pattern consistent with a role in limiting trophoblast invasion. In vitro and in vivo evidence indicates that HTRA3 restricts extravillous trophoblast migration and invasion, in part by remodelling the perivillous matrix and attenuating pro-invasive TGF- β signalling. In the ovary, HTRA3 is regulated by gonadotropins and participates in granulosa cell differentiation and luteinisation,

suggesting a broader role in reproductive-cycle-dependent tissue remodelling beyond placentation.

Disease Relevance

Reduced HTRA3 expression has been documented in several epithelial malignancies, including endometrial, lung, and ovarian cancers, supporting a tumour-suppressive function consistent with its roles in restraining invasion and modulating TGF-β signalling. Loss of HTRA3 expression correlates with advanced-stage disease and poor prognosis in some cohorts. Separately, dysregulation of HTRA3 has been implicated in preeclampsia, where impaired trophoblast invasion underlies the pathology. The combination of ECM-remodelling activity, TGF-β pathway modulation, and cell-invasion control makes HTRA3 a relevant target in reproductive pathology, cancer biology, and fibrosis research.

Gene & Protein Reference

Gene Symbol	HTRA3
HGNC	HGNC:18185
NCBI Gene ID (Human)	80764
NCBI Gene ID (Mouse)	225995
Ensembl	ENSG00000170801
OMIM	608352
UniProt (Human)	P83110
UniProt (Mouse)	Q8BH66
Protein Family	HtrA (high-temperature requirement factor A) serine protease family; Peptidase S1/S6 clan
Predicted MW	~51 kDa (long isoform); ~34 kDa (short isoform, PDZ-truncated)
Observed MW	~51 kDa and ~34 kDa on reducing SDS-PAGE (isoform-dependent)
Chromosome	4q25
Paralogue	HTRA1, HTRA2, HTRA4
Key Substrates	Decorin, biglycan, fibronectin, beta-casein
Activated by	Oligomerisation (trimer/hexamer formation); PDZ domain ligand engagement
Inhibited by	No endogenous protein inhibitor firmly established; active-site serine inhibitors (e.g., DFP, PMSF) inhibit in vitro

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.