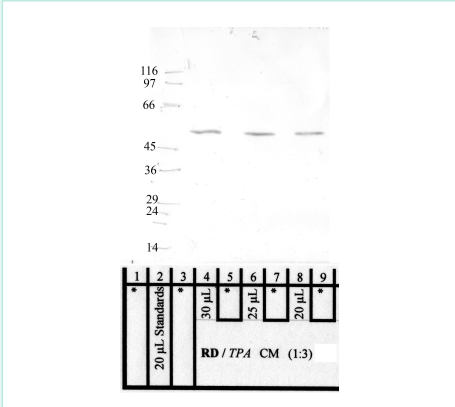


Anti-HTRA4 Rabbit Polyclonal Antibody

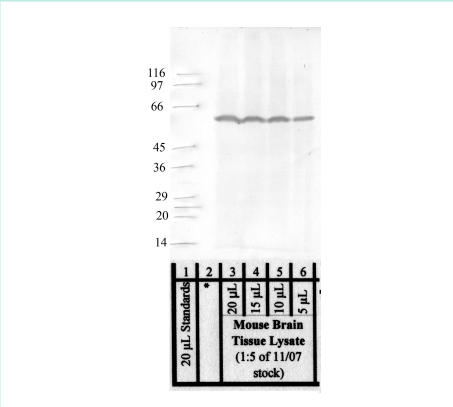
Serine protease HTRA4, EC 3.4.21.-, High-temperature requirement factor A4,

Gene: HTRA4 **UniProt:** P83105 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

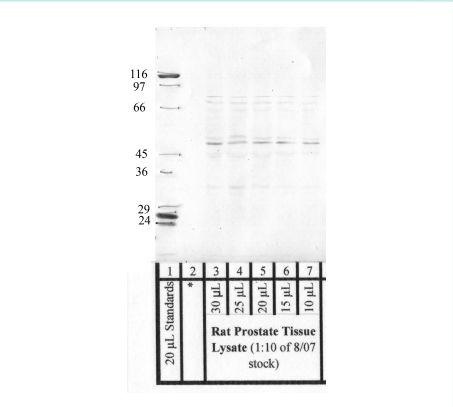
Product Image



Kazal-Like domain
RP1HTRA4



Catalytic domain
RP2HTRA4



PDZ domain
RP3HTRA4

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

Actual Western blot validation for anti-HTRA4 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-HTRA4 Rabbit Polyclonal Antibody
Gene Symbol	HTRA4
Alternative Names	Serine protease HTRA4, EC 3.4.21.-, High-temperature requirement factor A4,
UniProt ID	P83105
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
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-4-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of HTRA4. 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	88–154 Region within the N-terminal Kazal-like inhibitory domain of HTRA4, located downstream of the signal peptide cleavage site and upstream of the trypsin-like catalytic domain; this segment is structurally distinct from the analogous regions of HTRA1 and HTRA3, offering potential paralogue selectivity	RP1HTRA4	In catalog
Catalytic domain	32–476 Region spanning the trypsin-like serine protease catalytic domain of HTRA4, which harbours the conserved His-Asp-Ser catalytic triad; this central domain constitutes the core proteolytic module and is the most evolutionarily conserved region across HtrA family members	RP2HTRA4	In catalog
PDZ domain	383–474 Region within the C-terminal PDZ domain of HTRA4, which mediates substrate docking via recognition of C-terminal peptide motifs and contributes to allosteric regulation of catalytic activity; this domain also participates in protein–protein interactions within the extracellular matrix compartment	RP3HTRA4	In catalog
Carboxyterminal end	426–476 Region at the extreme C-terminus of HTRA4, situated at the distal end of the PDZ domain and representing the final translated residues of the mature protein; this segment may contribute to inter-subunit contacts within HTRA4 oligomers	RP4HTRA4	In catalog
—	32–476 Broad region spanning the majority of the mature HTRA4 protein from the post-signal-peptide N-terminus through the C-terminal PDZ domain, encompassing the Kazal-like inhibitory domain, the trypsin-like catalytic domain, and the PDZ domain; suitable for general detection of HTRA4 across multiple experimental contexts	RP-HTRA4	In catalog

Applications & Recommended Dilutions

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

Family & General Biology

HTRA4 is a member of the HtrA (high-temperature requirement factor A) family of serine proteases, which share a conserved trypsin-like catalytic domain coupled to one or two C-terminal PDZ domains. In humans, the HtrA family comprises four paralogues—HTRA1, HTRA2, HTRA3, and HTRA4—all of which function as ATP-independent quality-control proteases. HTRA4 encodes a 476-amino acid secreted protease containing a signal peptide, an N-terminal Kazal-like inhibitory domain, a trypsin-like serine protease catalytic domain (bearing the conserved His-Asp-Ser catalytic triad), and a C-terminal PDZ domain that mediates substrate and protein–protein interactions.

Expression & Localisation

HTRA4 expression is remarkably restricted compared to its paralogues. The protein is predominantly expressed in placental tissue, with highest levels detected in syncytiotrophoblasts and extravillous trophoblasts. Transcript and protein expression data from multiple independent datasets consistently show very low or undetectable HTRA4 in most adult somatic tissues, underscoring its specialised role in placental biology. The secreted protein associates with the extracellular matrix and has been detected in maternal plasma during pregnancy, where circulating levels vary with gestational age and with the development of pregnancy complications.

Activation Mechanism & Domain Architecture

Like other HtrA family members, HTRA4 is believed to be activated allosterically through a conformational rearrangement of the oxyanion hole upon substrate or PDZ-domain ligand binding, a mechanism well characterised in the HTRA1 and HTRA2 paralogues. The N-terminal Kazal-like domain may act as an intramolecular modulator of protease activity, and its presence distinguishes HTRA4 from HTRA1 and HTRA3. The PDZ domain facilitates recognition of specific C-terminal substrate motifs, coupling substrate docking to catalytic activation. HTRA4 oligomerises in solution, a property shared across the HtrA family that is associated with full proteolytic competence.

Key Substrates & Proteolytic Function

HTRA4 degrades or processes extracellular matrix proteins and secreted factors relevant to placental development. Substrates identified in cellular and biochemical studies include fibronectin and IGFBP-5 (insulin-like growth factor binding protein 5), consistent with a role in remodelling the pericellular matrix during trophoblast invasion. The serine protease activity of HTRA4 is blocked by broad-spectrum serine protease inhibitors, including PMSF and certain serpins, confirming its classification as an S1-family serine endopeptidase. Substrate specificity is further directed by the PDZ domain, which restricts the accessible substrate pool in the extracellular compartment.

Disease Relevance — Preeclampsia & Placental Pathology

Elevated HTRA4 protein levels have been consistently reported in placental tissue and maternal serum from pregnancies complicated by preeclampsia, positioning HTRA4 as both a potential biomarker and a mechanistic contributor to disease pathogenesis. Functional studies implicate excessive HTRA4 proteolytic activity in vascular endothelial injury, impaired trophoblast invasion, and disrupted autophagic flux within trophoblast populations—processes central to the shallow placentation that underlies early-onset preeclampsia. HTRA4 has also been examined in the context of placenta accreta spectrum disorders, where dysregulated trophoblast invasion and matrix remodelling are hallmark features.

Research Context

Specific detection of HTRA4 requires reagents capable of distinguishing it from the closely related paralogues HTRA1 and HTRA3, which share significant sequence homology in the catalytic domain. Antibodies raised against regions of lower inter-paralogue conservation—such as the Kazal-like domain or the C-terminal PDZ domain—offer improved selectivity in complex placental lysates and tissue sections. Western blot analyses of placental samples typically reveal HTRA4 at an apparent molecular weight consistent with the processed, signal-peptide-cleaved form. Immunohistochemical localisation in formalin-fixed placental sections provides spatial context for expression relative to villous architecture and invasion depth.

Gene & Protein Reference

Gene Symbol	HTRA4
HGNC	HGNC:18016
NCBI Gene ID (Human)	203100
NCBI Gene ID (Mouse)	n/a (no confirmed mouse orthologue; low conservation)
Ensembl	ENSG00000112992
OMIM	614741
UniProt (Human)	P83105
UniProt (Mouse)	Not established — HTRA4 is considered a primate-enriched gene with no confirmed functional mouse orthologue
Protein Family	Peptidase S1 / HtrA serine protease family
Predicted MW	~50 kDa (476 aa; signal peptide-cleaved mature form ~47 kDa)
Observed MW	~50–55 kDa by SDS-PAGE (placental lysate)
Chromosome	8p21.3
Paralogue	HTRA1, HTRA2, HTRA3
Key Substrates	Fibronectin, IGFBP-5 (insulin-like growth factor binding protein 5); extracellular matrix components
Activated by	Allosteric activation via PDZ-domain ligand binding and substrate-induced oxyanion hole remodelling; oligomerisation-dependent activation
Inhibited by	PMSF (phenylmethylsulfonyl fluoride); broad-spectrum serpin-class serine protease inhibitors

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.