

**Alpha 1 microglobulin Polyclonal Antibody**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP58454**

**Specification**

**Alpha 1 microglobulin Polyclonal Antibody - Product Information**

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	<a href="#">P02760</a>
Reactivity	Rat, Dog, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	7/16/37 KDa
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Protein AMBP
Epitope Specificity	281-352/352
Isotype	IgG
<b>Purity</b>	
affinity purified by Protein A	
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Secreted.
SIMILARITY	In the N-terminal section; belongs to the calyculin superfamily. Lipocalin family. Contains 2 BPTI/Kunitz inhibitor domains. I-alpha-I plasma protease inhibitors are assembled from one or two heavy chains (H1, H2 or H3) and one light chain, bikunin. Inter-alpha-inhibitor (I-alpha-I) is composed of H1, H2 and bikunin, inter-alpha-like inhibitor (I-alpha-LI) of H2 and bikunin, and pre-alpha-inhibitor (P-alpha-I) of H3 and bikunin. Alpha-1-microglobulin occurs as a monomer and also in complexes with IgA and albumin. Alpha-1-microglobulin interacts with FN1. Trypstatin is a monomer and also occurs as a complex with trypsin in mast cells (By similarity). Alpha-1-microglobulin and bikunin interact (via SH3 domain) with HEV ORF3 protein. The precursor is proteolytically processed into separately functioning proteins. 3-hydroxykynurenine, an oxidized tryptophan metabolite that is common in biological fluids, reacts with Cys-53, Lys-111, Lys-137, and Lys-149 to form heterogeneous polycyclic chromophores including hydroxanthommatin. The reaction by
SUBUNIT	
Post-translational modifications	

**alpha-1-microglobulin is autocatalytic; the human protein forms chromophore even when expressed in insect and bacterial cells. The chromophore can react with accessible cysteines forming non-reducible thioether cross-links with other molecules of alpha-1-microglobulin or with other proteins such as Ig alpha-1 chain C region 'Cys-352'. Heavy chains are interlinked with bikunin via a chondroitin-4-sulfate bridge to the their C-terminal aspartate (By similarity). N- and O-glycosylated. N-glycan heterogeneity at Asn-115: Hex5HexNAc4 (major), Hex6HexNAc5 (minor) and dHex1Hex6HexNAc5(minor). N-glycan at Asn-250: Hex5HexNAc4. O-linkage of the glycosaminoglycan, chondroitin sulfate, at Ser-215 allows cross-linking between the three polypeptide chains.**

**This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.**

#### Important Note

#### Background Descriptions

This gene encodes a complex glycoprotein secreted in plasma. The precursor is proteolytically processed into distinct functioning proteins: alpha-1-microglobulin, which belongs to the superfamily of lipocalin transport proteins and may play a role in the regulation of inflammatory processes, and bikunin, which is a urinary trypsin inhibitor belonging to the superfamily of Kunitz-type protease inhibitors and plays an important role in many physiological and pathological processes. This gene is located on chromosome 9 in a cluster of lipocalin genes.

#### Alpha 1 microglobulin Polyclonal Antibody - Additional Information

##### Gene ID 259

##### Other Names

Protein AMBP, Alpha-1-microglobulin, Protein HC, Alpha-1 microglycoprotein, Complex-forming glycoprotein heterogeneous in charge, Inter-alpha-trypsin inhibitor light chain, ITI-LC, Bikunin, EDC1, HI-30, Uronic-acid-rich protein, Trypstatin, AMBP, HCP, ITIL

##### Target/Specificity

Expressed by the liver and secreted in plasma. Alpha-1-microglobulin occurs in many physiological fluids including plasma, urine, and cerebrospinal fluid. Inter-alpha-trypsin inhibitor is present in plasma and urine.

##### Dilution

WB ~ 1:1000  
IHC-P ~ N/A  
IHC-F ~ N/A  
IF ~ 1:50 ~ 200  
E ~ N/A

##### Storage

Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

## Alpha 1 microglobulin Polyclonal Antibody - Protein Information

**Name** AMBP

**Synonyms** HCP, ITIL

### Function

[Alpha-1-microglobulin]: Antioxidant and tissue repair protein with reductase, heme-binding and radical-scavenging activities. Removes and protects against harmful oxidants and repairs macromolecules in intravascular and extravascular spaces and in intracellular compartments (PubMed:<a href="http://www.uniprot.org/citations/11877257" target="\_blank">11877257</a>, PubMed:<a href="http://www.uniprot.org/citations/15683711" target="\_blank">15683711</a>, PubMed:<a href="http://www.uniprot.org/citations/22096585" target="\_blank">22096585</a>, PubMed:<a href="http://www.uniprot.org/citations/23157686" target="\_blank">23157686</a>, PubMed:<a href="http://www.uniprot.org/citations/23642167" target="\_blank">23642167</a>, PubMed:<a href="http://www.uniprot.org/citations/25698971" target="\_blank">25698971</a>, PubMed:<a href="http://www.uniprot.org/citations/32092412" target="\_blank">32092412</a>, PubMed:<a href="http://www.uniprot.org/citations/32823731" target="\_blank">32823731</a>). Intravascularly, plays a regulatory role in red cell homeostasis by preventing heme- and reactive oxygen species-induced cell damage. Binds and degrades free heme to protect fetal and adult red blood cells from hemolysis (PubMed:<a href="http://www.uniprot.org/citations/11877257" target="\_blank">11877257</a>, PubMed:<a href="http://www.uniprot.org/citations/32092412" target="\_blank">32092412</a>). Reduces extracellular methemoglobin, a Fe<sup>3+</sup> (ferric) form of hemoglobin that cannot bind oxygen, back to the Fe<sup>2+</sup> (ferrous) form deoxyhemoglobin, which has oxygen-carrying potential (PubMed:<a href="http://www.uniprot.org/citations/15683711" target="\_blank">15683711</a>). Upon acute inflammation, inhibits oxidation of low- density lipoprotein particles by MPO and limits vascular damage (PubMed:<a href="http://www.uniprot.org/citations/25698971" target="\_blank">25698971</a>). Extravascularly, protects from oxidation products formed on extracellular matrix structures and cell membranes. Catalyzes the reduction of carbonyl groups on oxidized collagen fibers and preserves cellular and extracellular matrix ultrastructures (PubMed:<a href="http://www.uniprot.org/citations/22096585" target="\_blank">22096585</a>, PubMed:<a href="http://www.uniprot.org/citations/23642167" target="\_blank">23642167</a>). Importantly, counteracts the oxidative damage at blood-placenta interface, preventing leakage of free fetal hemoglobin into the maternal circulation (PubMed:<a href="http://www.uniprot.org/citations/21356557" target="\_blank">21356557</a>). Intracellularly, has a role in maintaining mitochondrial redox homeostasis. Bound to complex I of the respiratory chain of mitochondria, may scavenge free radicals and preserve mitochondrial ATP synthesis. Protects renal tubule epithelial cells from heme-induced oxidative damage to mitochondria (PubMed:<a href="http://www.uniprot.org/citations/23157686" target="\_blank">23157686</a>, PubMed:<a href="http://www.uniprot.org/citations/32823731" target="\_blank">32823731</a>). Reduces cytochrome c from Fe<sup>3+</sup> (ferric) to the Fe<sup>2+</sup> (ferrous) state through formation of superoxide anion radicals in the presence of ascorbate or NADH/NADPH electron donor cofactors, ascorbate being the preferred cofactor (PubMed:<a href="http://www.uniprot.org/citations/15683711" target="\_blank">15683711</a>). Has a chaperone role in facilitating the correct folding of bikunin in the endoplasmic reticulum compartment (By similarity).

### Cellular Location

[Alpha-1-microglobulin]: Secreted. Endoplasmic reticulum. Cytoplasm, cytosol. Cell membrane; Peripheral membrane protein. Nucleus membrane; Peripheral membrane protein. Mitochondrion inner membrane; Peripheral membrane protein. Secreted, extracellular space, extracellular matrix. Note=The cellular uptake occurs via a non-endocytotic pathway and allows for localization to various membrane structures. A specific binding to plasma membrane suggests the presence of a cell receptor, yet to be identified Directly binds collagen fibers type I.

### Tissue Location

[Alpha-1-microglobulin]: Expressed by the liver and secreted in plasma. Occurs in many physiological fluids including plasma, urine, and cerebrospinal fluid (PubMed:11877257). Expressed in epidermal keratinocytes, in dermis and epidermal-dermal junction (at protein level) (PubMed:22096585). Expressed in red blood cells (at protein level) (PubMed:32092412). Expressed in placenta (PubMed:21356557).

### **Alpha 1 microglobulin Polyclonal Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### **Alpha 1 microglobulin Polyclonal Antibody - Images**