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Alpha 1 microglobulin Recombinant Rabbit mAb

Catalog # AP100016

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P02760
Other Accession	P02760
Reactivity	Human
Host	Rabbit
Clonality	Recombinant
Calculated MW	38999
Physical State	Liquid
Immunogen	A synthesized peptide derived from human AMBP
Epitope Specificity	50-100/352
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	10mM phosphate buffered saline(pH 7.4) with 150mM sodium chloride, 0.05% BSA, 0.02% Proclin300 and 50% glycerol.
SIMILARITY	In the N-terminal section; belongs to the calycinsuperfamily. Lipocalin family. Contains 2 BPTI/Kunitz inhibitor domains.
SUBUNIT	I-alpha-I plasma protease inhibitors are assembled fromone or two heavy chains (H1, H2 or H3) and one light chain,bikunin. Inter-alpha-inhibitor (I-alpha-I) is composed of H1, H2and bikunin, inter-alpha-like inhibitor (I-alpha-LI) of H2 andbikunin, and pre-alpha-inhibitor (P-alpha-I) of H3 and bikunin.Alpha-1-microglobulin occurs as a monomer and also in complexeswith IgA and albumin. Alpha-1-microglobulin interacts with FN1.Trypstatin is a monomer and also occurs as a complex with tryptasein mast cells (By similarity). Alpha-1-microglobulin and bikuninteract (via SH3 domain) with HEV ORF3 protein.
Post-translational modifications	The precursor is proteolytically processed into separatelyfunctioning proteins.3-hydroxykynurenine, an oxidized tryptophan metabolite thatis common in biological fluids, reacts with Cys-53, Lys-111,Lys-137, and Lys-149 to form heterogeneous polycyclic chromophoresincluding hydroxanthommatin. The reaction by alpha-1-microglobulinis autocatalytic; the human protein forms chromophore even whenexpressed in insect and bacterial cells. The chromophore can reactwith accessible cysteines forming non-reducible thioethercross-links with other molecules of alpha-1-microglobulin or withother proteins such as Ig alpha-1 chain C region 'Cys-352'.Heavy chains are interlinked with bikunin via a chondroitin4-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 theglycosaminoglycan, chondroitin sulfate, at Ser-215 allowscross-linking between the three polypeptide chains.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	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.

Additional Information

Gene ID	259
Other Names	A1M; EDC1; HCP; HI30; IATIL; ITI; ITIL; ITILC; UTI; AMBP_HUMAN; AMBP; Protein HC; AMBP_RAT; alpha-1-microglobulin/bikunin precursor; growth-inhibiting protein 19; uristatin; complex-forming glycoprotein heterogeneous in charge; bikunin; inter-alpha-trypsin inhibitor light chain; uronic-acid-rich protein; trypstatin
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
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.

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:11877257, PubMed:15683711, PubMed:22096585, PubMed:23157686, PubMed:23642167, PubMed:25698971, PubMed:32092412, PubMed:32823731). 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:11877257, PubMed:32092412). Reduces extracellular methemoglobin, a Fe3+ (ferric) form of hemoglobin that cannot bind oxygen, back to the Fe2+ (ferrous) form deoxyhemoglobin, which has oxygen-carrying potential (PubMed:15683711). Upon acute inflammation, inhibits oxidation of low- density lipoprotein particles by MPO and limits vascular damage (PubMed:25698971). 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:22096585, PubMed:23642167). Importantly, counteracts the oxidative damage at blood-placenta interface, preventing leakage of free fetal hemoglobin into the maternal circulation (PubMed:21356557). 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:23157686, PubMed:32823731). Reduces cytochrome c from Fe3+ (ferric) to the Fe2+ (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:15683711). 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).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.