



LD Biopharma, Inc.
7384 Trade Street, Suite B
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Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human A1M Protein
Catalog Number: hRP-1955
Manufacturer: LD Biopharma, Inc.

Introduction

Human AMBP preproprotein gene encodes a complex glycoprotein secreted in plasma. The precursor is proteolytically processed into distinct functioning proteins: alpha-1-microglobulin (A1M), 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. AMBP binds and degrades heme, is a radical scavenger as well as a reductase. A model has been proposed in which A1M is described as a circulating “waste bin” which continuously removes free radicals and oxidizing agents, particularly heme, from the tissues. It is subsequently transported to the kidneys, where it is broken down. The protein is therefore believed to protect cells and tissues against the damage that is induced by abnormally high concentrations of free hemoglobin and/or reactive oxygen species (also called “oxidative stress”).

Full-length human Alpha-1 microglobulin (A1M) cDNA (20-203aa) was constructed with codon optimization gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein was expressed in E. coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: A1M (AMBP; EDC1; HCP; HI30; IATIL; ITI; ITIL; UTI)
Accession Number: NP_001624
Species: Human
Size: 20 µg / Vial
Composition: 0.20 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.



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Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Anderson UD, et al., *Fetal hemoglobin, alpha1-microglobulin and hemopexin are potential predictive first trimester biomarkers for preeclampsia*. *Pregnancy Hypertens* 6 (2), 103-109 (2016)

Xu Y, et al., *The crystal structure of bikunin from the inter-alpha-inhibitor complex: a serine protease inhibitor with two Kunitz domains*. *J. Mol. Biol.* 276 (5), 955-966 (1998)

Applications

1. May be used for in vitro AIM mediated radical scavenger pathway regulation study for various cells by intracellular delivery of this protein with protein-delivery reagent such as ProFectin Reagent Kit.
2. May be used for protein-protein interaction interaction assay.
3. As substrate protein for various proteases assay.
4. Potential diagnostic protein, which may be used for preeclampsia application.
5. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHGNLYFQGGFPGVPVTPPDNIQVQENFNISRIYGKWNLAIGSTCP
WLKKIMDRMTVSTLVLGEGATEAEISMTSTRWRKGVCEETSGAYEKTDTDGKFLYHKSKWNITM
ESYVVHTNYDEYAIFLTKKFSRHHGPTITAKLYGRAPQLRETLQDFRVVAQGVGIPEDSIFTM
ADRGECPGEGEPEPILIPRV