



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



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# PRODUCT INFORMATION



## $\alpha$ 1-Microglobulin (human, recombinant)

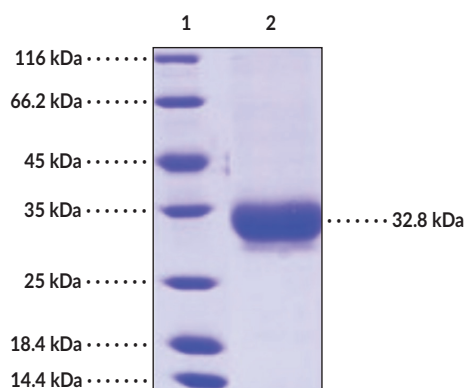
Item No. 38053

### Overview and Properties

**Synonyms:** A1M,  $\alpha$ 1-Microglycoprotein, Protein HC  
**Source:** Recombinant human C-terminal His-tagged  $\alpha$ 1-microglobulin expressed in HEK293 cells  
**Amino Acids:** 20-203  
**Uniprot No.:** P02760  
**Molecular Weight:** 22.3 kDa  
**Storage:** -80°C (as supplied)  
**Stability:**  $\geq$ 1 year  
**Purity:**  $\geq$ 95% estimated by SDS-PAGE  
**Supplied in:** Lyophilized from sterile PBS, pH 7.4  
**Endotoxin Testing:** <1.0 EU/ $\mu$ g, determined by the LAL endotoxin assay  
**Bioactivity:** See figure for details

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Image



Lane 1: MW Markers  
Lane 2:  $\alpha$ 1-Microglobulin

**SDS-PAGE Analysis of  $\alpha$ 1-Microglobulin.** This protein has a calculated molecular weight of 22.3 kDa. It has an apparent molecular weight of approximately 32.8 kDa by SDS-PAGE under reducing conditions due to glycosylation.

WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY  
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# PRODUCT INFORMATION



## Description

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$\alpha$ 1-Microglobulin (A1M) is a glycoprotein and member of the lipocalin protein family encoded by the  $\alpha$ 1-microglobulin-bikunin precursor gene *AMBIP*.<sup>1,2</sup> It is expressed in all tissues, except the CNS, and in blood.<sup>2</sup> A1M is synthesized in the liver, secreted into circulation where it forms complexes with IgA, albumin, and prothrombin, and subsequently equilibrated over the vessel wall between the intra- and extravascular compartments of all organs.<sup>1,3</sup> A1M is heterogenous in charge and size, covalently bound to chromophores, and exists in various glycoforms.<sup>3</sup> It binds free radicals, as well as heme, and has roles in various diseases involving oxidative stress. Plasma levels of A1M are increased and positively correlated with plasma peroxidation and the level of protein carbonyls in patients with preeclampsia.<sup>3,4</sup> Urinary levels of A1M are positively correlated with increased risk of acute kidney injury and other adverse events following cardiac surgery in adult patients.<sup>5</sup> Cayman's  $\alpha$ 1-Microglobulin (human, recombinant) protein consists of 195 amino acids, has a calculated molecular weight of 22.3 kDa, and a predicted N-terminus of Gly20 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 32.8 kDa due to glycosylation.

## References

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1. Bergwik, J., Kristiansson, A., Larsson, J., *et al.* Binding of the human antioxidation protein  $\alpha$ <sub>1</sub>-microglobulin (A1M) to heparin and heparan sulfate. Mapping of binding site, molecular and functional characterization, and co-localization *in vivo* and *in vitro*. *Redox Biol.* **41**, 101892 (2021).
2. Akerström, B., Lögdberg, L., Berggård, T., *et al.*  $\alpha$ <sub>1</sub>-Microglobulin: A yellow-brown lipocalin. *Biochim. Biophys. Acta* **1482**(1-2), 172-184 (2000).
3. Bergwik, J., Kristiansson, A., Allhorn, M., *et al.* Structure, functions, and physiological roles of the lipocalin  $\alpha$ <sub>1</sub>-microglobulin (A1M). *Front. Physiol.* **12**, 645650 (2021).
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5. Amatruda, J.G., Estrella, M.M., Garg, A.X., *et al.* Urine alpha-1-microglobulin levels and acute kidney injury, mortality, and cardiovascular events following cardiac surgery. *Am. J. Nephrol.* **52**(8), 673-683 (2021).

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