

**CIL**Cambridge Isotope Laboratories, Inc.
isotope.com**Product Data Sheet****Heavy-Labeled MS Protein Standard for Bottom-Up Proteomics****Human ApoA-1 (¹⁵N, 98%)****Catalog No. NLM-9539****Significance**

Apolipoprotein A-1 (ApoA-1) is the primary protein component of high-density lipoprotein (HDL) in plasma and has a specific role in lipid metabolism. It is a structural and functional protein that promotes cholesterol efflux from tissues to the liver. Testing for ApoA-1 is used to approximate HDL levels in a subject, which can be used to help determine a person's risk for developing cardiovascular disease. By combining the power of LC-MS and a heavy-labeled ApoA-1 internal standard, accurate quantitation of this protein in a biological sample is achievable using a bottom-up proteomic workflow.¹

Product Description

Human ApoA-1, uniformly labeled ¹⁵N enriched, dissolved in phosphate-buffered saline at a nominal concentration of 2 mg/mL.

Product Specifications

| Analytical Test | Specification |
|--------------------------------|----------------------|
| LC-MS for isotopic enrichment* | >98% ¹⁵ N |
| SDS-PAGE for purity | >90% |
| AAA for concentration | ~1.2 mg/mL** |

*LC-MS of tryptic peptides

**actual lot-specific result reported on CoA

Additional Information

pH = 7.4

Storage: Store at -80°C; avoid freeze-thaw cycles

Stability: 1 year if stored in recommended conditions

Molecular weight (calculated):

ApoA-1 (unlabeled) = 29.9 kDa

ApoA-1 (¹⁵N) = 30.3 kDa

Offered in partnership with:

**Protein Sequence**

MHHGHHGHHGLVPRGSIDDPPQSPWDRVKDLATVYVDVLK
DSGRDYVSQFEGSALGKQLNLKLLDNWDSVTSTFSKLREQLGP
VTQEFWDNLEKETEGLRQEMSKDLEEVKAKVOPYLDDFQKKW
QEEMELYRQKVEPLRAELOEGAROKLHELOEKLSPGGEEMRDRA
RAHVLDALRTHLAPYSDELQRRLAARLEALKENGGARLAEYHAK
ATEHLSTLSEKAKPALEDLROGLLPVLESFKVSFLSALEEYTKKLNTQ

Note: The underlined residues are different from wild-type ApoA-1. The bold text is indicative of a polyhistidine tag. Because ApoA-1 has an inherent pre-pro sequence, the presence of this element on the mature protein is well tolerated.

Reference

1. Shwaiger, M.; Rampler, E.; Hermann, G.; et al. **2017**. Anion-Exchange Chromatography Coupled to High-Resolution Mass Spectrometry: A Powerful Tool for Merging Targeted and Non-targeted Metabolomics. *Anal Chem*, 89(14), 7667-7674. PMID: 28581703.
2. Hoofnagle, A.N.; Becker, J.O.; Oda, M.N.; Cavigliolo, G.; Mayer, P.; Vaisar, T. **2012**. Multiple-reaction monitoring-mass spectrometric assays can accurately measure the relative protein abundance in complex mixtures. *Clin Chem*, 58(4), 777-781. PMID: 22307200.

