Product Information

SILu™Prot ALB, Albumin, Human Recombinant, Expressed in HEK Cells SIL MS Protein Standard, ^{13}C- and ^{15}N-labeled

MSST0011
Storage temperature -20 °C

Product Description

SILu™Prot ALB is a recombinant, stable isotope-labeled human albumin which incorporates [$^{13}C_6$, $^{15}N_4$]-Arginine and [$^{13}C_6$, $^{15}N_2$]-Lysine. Expressed in human 293 cells, it is designed to be used as an internal standard for bioanalysis of albumin in mass spectrometry. SILu™Prot ALB is a monomer of 607 amino acids (including C-terminal polyhistidine and FLAG® tags), with a calculated molecular mass of 69.6 kDa.

Albumin is synthesized exclusively by the liver parenchymal cells at a rate of 14 g/day.[1] While it is the most abundant plasma protein (> 50%),[1] increased urine albumin concentrations indicate bleedings in the lower urinary tract (ureter, bladder) or infections of the renal pelvis.[2] A small abnormal albumin excretion is known as microalbuminuria and serves as an indicator for temporary overload of the glomerular filtration (fever, excessive sports)[3] or chronic injury of the glomeruli (diabetes).[4]

Each vial contains 10–13 µg of SILu™Prot ALB standard, lyophilized from a solution of phosphate buffered saline. Vial content was determined by the Bradford method using BSA as a calibrator. The correction factor from the Bradford method to Amino Acid Analysis is 75% for this protein.

Identity: Confirmed by peptide mapping

Purity: ≥ 95% (SDS-PAGE)

Heavy amino acid incorporation efficiency: ≥ 98% (MS)

UniProt: P02768

Sequence Information

The C-terminal polyhistidine and FLAG® tags are italicized.

RRDAHKSEVAHRFKDLGEENFKALVLIAFAQYLQQCPFEDH
VKLVNEVTEFAKTCVADESAENCDKSLHTLFGDKLCTVATL
RETYGEMADCCAKQEPERNECFLQHKDDNPNLPRLVRPEV
DVMCTAFHDNEETFLKKYLYEIARRHPYFYAPELLFFAKRYK
AAFTECCQAADKAACLLPKLDELRDEGKASSAKQRLKCAS
LQKFGERAFKAWAVARLSQRFPKAEFAEVSKLVTDLTKVHT
ECCHGDLLECADDRADLAKYICENQDSISSKLKECCEKPLL
EKSHCIAEVENDEMPADLPSLAADFVESKDVCKNYAEAKD
VFLGMFLYEYARRHPDYSVVLLLRLAKTYETTLEKCCAAADP
HECYAKVFDEFKPLVEEPQNLIKQNCELFEQLGEYKFQNAL
LVRYTKKVPQVSTPTLVEVSRNLGKVGSKCCKHPEAKRMP
CAEDYLSVVLNQLCVLHEKTPVSDRVTKCCTESLVNRRPCF
SALEVDETYVPKEFNAETFTFHADICTLSEKERQIKKQTALV
ELVKHKPKATKEQLKAVMDDFAAFVEKCCKADDKETCFAE
EGKKLVAASQAALGL*DYKDDDDKGHHHHHHHHGGQ*

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Briefly centrifuge the vial before opening. It is recommended to reconstitute the protein in sterile ultrapure water to a final concentration of 100 µg/mL.

Storage/Stability

Store the lyophilized product at –20 °C. The product is stable for at least 2 years as supplied. After reconstitution, it is recommended to store the protein in working aliquots at –20 °C.

References

1. Thomas, L., Clinical Laboratory Diagnostics. 1st ed. Frankfurt: TH-Books Verlagsgesellschaft 652-3 (1998).
2. Ware, L.B. et al., Renal cortical albumin gene induction and urinary albumin excretion in response to acute kidney injury. *Am. J. Physiol. Renal Physiol.,* **300** (3), 628-38 (2011).
3. Lopez-Giacoman, S. et al., Biomarkers in chronic kidney disease, from kidney function to kidney damage. *World J. Nephrol.,* **4** (1), 57-73 (2015).
4. Andersen, S. et al., Glomerular permselectivity in early stages of overt diabetic nephropathy. *Kidney Int.,* **58** (5), 2129–37 (2000).

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