

Product Information

SILu™Lite B2M, Beta-2-Microglobulin, Human Recombinant, Expressed in HEK cells MS Protein Standard

MSST0016

Storage temperature -20 °C

Synonym: β 2-microglobulin

Product Description

SILu™Lite B2M is a recombinant human protein expressed in human 293 cells. It is a monomer of 119 amino acids (including C-terminal polyhistidine and FLAG® tags), with a calculated molecular mass of 14.1 kDa. SILu™Lite B2M is an analytical standard designed to be used as starting material for preparation of calibrators and controls in LC-MS applications.

B2M is the light chain of the major histocompatibility class (MHC) I molecule expressed on the cell surface of all nucleated cells.¹ Increased urinary B2M excretion has been observed to be an early marker of tubular injury in a number of settings, including nephrotoxicant exposure,² cardiac surgery,³ and renal transplantation,⁴ preceding rises in serum creatinine by as many as 4–5 days.⁵ B2M may also serve as an early biomarker for AKI (Acute Kidney Injury).⁶

Each vial contains 50–65 µg of SILu™Lite B2M 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 55% for this protein.

Identity

Confirmed by peptide mapping

Purity

≥ 95% (SDS-PAGE)

UniProt

P61769

Sequence Information

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

IQRTPKIQVYSRHPAENGKSNFLNCYVSGFHPSDIE
VDLLKNGERIEKVEHSDLSFSKDWSFYLLYYTEFTP
TEKDEYACRVNHVTLSPKIVKWDRDMDYKDDDD
KGHHHHHHHHGGQ

Transitions for three peptides (underlined) suggested for selected reaction monitoring analysis (SRM) are provided for download on the product display page at www.sigmaaldrich.com.

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. Chiou, S-J., and Chen, C-H., Decipher β 2-microglobulin: Gain- or loss-of-function (a mini-review). *Medical Science Monitor Basic Research*, **19**, 271-273 (2013).
2. Chapelsky, M.C. et al., Renal tubular enzyme effects of clarithromycin in comparison with gentamicin and placebo in volunteers. *Drug Saf.*, **7(4)**, 304-9 (1992).
3. Dehne, M.G. et al., Tamm-Horsfall protein, alpha-1- and beta-2-microglobulin as kidney function markers in heart surgery. *Anaesthesist.*, **44(8)**, 545-51 (1995).
4. Schaub, S. et al., Proteomic-based identification of cleaved urinary beta2-microglobulin as a potential marker for acute tubular injury in renal allografts. *Am. J. Transplant*, **5**, 729-38 (2005).
5. Tolkoff-Rubin, N.E. et al., Noninvasive renal diagnostic studies. *Clin. Lab. Med.*, **8(3)**, 507-26 (1988).
6. Herget-Rosenthal, S. et al., Prognostic value of tubular proteinuria and enzymuria in nonoliguric acute tubular necrosis. *Clin. Chem.*, **50(3)**, 552-8 (2004).

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