

## 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.<sup>1</sup> Increased urinary B2M excretion has been observed to be an early marker of tubular injury in a number of settings, including nephrotoxicant exposure,<sup>2</sup> cardiac surgery,<sup>3</sup> and renal transplantation,<sup>4</sup> preceding rises in serum creatinine by as many as 4–5 days.<sup>5</sup> B2M may also serve as an early biomarker for AKI (Acute Kidney Injury).<sup>6</sup>

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  
VDLLKNGERIEKVEHSDLFSKDWSFYLLYYTEFTP  
TEKDEYACRVNHVTLSQPKIVKWRDMDYKDDDD  
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](http://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  $\beta$ 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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MSST0016dat Rev 05/21

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