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Product Information

SILu™Prot IGFBP7,
Insulin-like growth factor-binding protein 7, human recombinant, expressed in HEK cells
SIL MS Protein Standard, ^{13}C- and ^{15}N-labeled

Catalog Number **MSST0037**
Storage Temperature –20 °C

Synonyms: IBP-7, IGF-binding protein 7, IGFBP-rP1, MAC25 protein, PGI2-stimulating factor, Prostacyclin-stimulating factor, Tumor-derived adhesion factor (TAF)

Product Description

SILu™Prot IGFBP7 is a recombinant, stable isotope-labeled human IGFBP7 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 IGFBP7 in mass spectrometry. SILu™Prot IGFBP7 is a protein consisting of 267 amino acids (including an N-terminal polyhistidine tag), with a calculated molecular mass of 28.0 kDa.

IGFBP7 regulates the availability of insulin-like growth factors (IGFs) in tissue, and modulates IGF binding to its receptors.[1] IGFBP7 binds to IGF with high affinity.[1] Several studies have shown the involvement of IGFBP7 in Acute Kidney Injury (AKI), where its levels can predict patients at risk for developing AKI.[2-4] When combined with TIMP-2, the accuracy of AKI risk prediction is further increased.[4] Urinary [TIMP-2]×[IGFBP7] test sufficiently detects patients with risk of AKI after major non-cardiac surgery.[5] In addition, Urinary [TIMP-2]×[IGFBP7] serves as a sensitive and specific biomarker to predict AKI early after cardiac surgery and to predict renal recovery.[6]

Each vial contains 10–13 μg of SILu™Prot IGFBP7 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 80% for this protein.

Identity: Confirmed by peptide mapping

Purity: ≥95% (SDS-PAGE)

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

UniProt: Q16270

Sequence Information
The N-terminal polyhistidine tag is italicized.

*HHHHHHHH*GGQSSSDTCGPCEPASCPPLPPLGCLL
GETRDACGCCPMCARGEGEPCGGGGAGRGYCAPG
MECVKSRKRRKGKAGAAAGGPGVSGVCVCKSRYPV
CGSDGTTYPSGCQLRAASQRAESRGEKAITQVSKGT
CEQGPSIVTPPKDIWNVTGAQVYLSCEVIGIPTPVLIW
NKVKRGHYGVQRTELLPGDRDNLAIQTRGGPEKHEV
TGWVLVSPLSKEDAGEYECHASNSQGQASASAKITV
VDALHEIPVKKGEGAEL

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. Oh, Y. et al., Synthesis and characterization of insulin-like growth factor-binding protein (IGFBP)-7. Recombinant human mac25 protein specifically binds IGF-I and -II. *J. Biol. Chem.,* **271**, 30322-30325 (1996).
2. Bihorac, A. et al., Validation of Cell-Cycle Arrest Biomarkers for Acute Kidney Injury Using Clinical Adjudication. *Am. J. Respir. Crit. Care Med.,* **189**, 932-939 (2014).
3. Gunnerson, K.J. et al., TIMP2•IGFBP7 biomarker panel accurately predicts acute kidney injury in high risk surgical patients. *J. Trauma Acute Care Surg.,* (2015).
4. Bell, M. et al., Assessment of Cell-Cycle Arrest Biomarkers to Predict Early and Delayed Acute Kidney Injury. *Dis. Markers,* (2015).
5. Gocze, I. et al., Urinary Biomarkers TIMP-2 and IGFBP7 Early Predict Acute Kidney Injury after Major Surgery. *PLoS ONE,* **10**, e0120863 (2015).
6. Meersch, M. et al., Urinary TIMP-2 and IGFBP7 as Early Biomarkers of Acute Kidney Injury and Renal Recovery following Cardiac Surgery. *PLoS ONE,* **9**, e93460 (2014).

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