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Product Information

SILu™Prot TIMP2, Metalloproteinase inhibitor 2 human, recombinant, expressed in HEK 293 cells, SIL MS Protein Standard, ^{13}C and ^{15}N-labeled

Catalog Number **MSST0045**
Storage Temperature –20 °C

Synonyms: CSC-21K, Tissue inhibitor of metalloproteinases 2 (TIMP-2)

Product Description
SILu™Prot TIMP2 is a recombinant, stable isotope-labeled human TIMP2 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 TIMP2 in mass spectrometry. SILu™Prot TIMP2 is a protein of 194 amino acids, with a calculated molecular mass of 21.7 kDa.

While the mammalian TIMP family has four members, TIMP-2 is a unique family member in that in addition to inhibiting matrix metalloproteinases (MMPs), TIMP-2 selectively interacts with MT1-MMP to facilitate the cell-surface activation of pro-MMP-2.[1] Thus, TIMP-2 functions both as an inhibitor of MMPs, and is required for the cellular mechanism of pro-MMP-2 activation.[1] Recently, it was validated that combination of TIMP-2 with another urinary cell-cycle arrest biomarker, i.e. the insulin-like growth factor-binding protein 7 (IGFBP7) may predict the risk of moderate and severe acute kidney injury (AKI) in critically ill patients.[2] For postoperative surgical intensive care unit patients, a single urinary TIMP2·IGFBP7 test accurately identified patients at risk for developing AKI within the ensuing 12 hours and its inclusion in clinical risk prediction models significantly enhances their performance.[3]

Each vial contains 10 μg of SILu™Prot TIMP2 standard, lyophilized from a solution of phosphate buffered saline. Vial content was determined by the Bradford method using BSA as a calibrator.

Purity: ≥95% (SDS-PAGE)

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

UniProt: P16035

Sequence Information:
CSCSPVHPQQAFCNADVVIRAKAVSEKEVDSGNDIY
GNPIKRIQYEIKQIKMFKGPEKDIEFIYTAPSSAVCGVS
LDVGGKKEYLIAGKAEGDGKMHITLCDFIVPWDTLST
TQKKSLNHRYQMGCECKITRCPMIPCYISSPDECLW
MDWVTEKNINGHQAKFFACIKRSDGSCAWYRGAAPP
KQEFLDIEDP

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. Stetler-Stevenson, W.G., Matrix metalloproteinases in angiogenesis: a moving target for therapeutic intervention. *J. Clin. Invest*., **103**, 1237-1241 (1999).
2. Gocze, I. et al., Urinary biomarkers TIMP-2 and IGFBP7 early predict acute kidney injury after major surgery. Zarbock A, ed., *PLoS ONE* **10**, e0120863 (2015).
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*., **80**, 243-249 (2016).

Legal Information

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