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Product Information

SILu™Lite CST3, Cystatin C, human recombinant, expressed in *E. coli* MS Protein Standard

Catalog Number **MSST0060**
Storage Temperature –20 °C

Synonyms: Cystatin 3, CYTC, Post-gamma-globulin, Neuroendocrine basic polypeptide.

Product Description
SILu™Lite CST3 is a recombinant, human CST3, expressed in *E. coli*. It consists of 120 amino acids, with a calculated molecular mass of 13.4 kDa. SILu™Lite CST3 is an analytical standard designed to be used as starting material for preparation of calibrators and controls in LC-MS applications.

Cystatin C (CST3) is a small protein consisting of a single polypeptide chain, secreted at a constant rate by most nucleated cells in human body. It belongs to the family of papain-like cysteine protease inhibitors, and its main biological role is the inhibition of extracellular cathepsins.[1-5] Since Cystatin C is constantly secreted, freely filtered by the glomerulus and then fully absorbed in the proximal tubules, the serum concentration is considered to be an accurate marker of the glomerular filtration rate.[3,4] Cystatin C is normally absent in the urine, therefore it has been suggested that the presence of urinary Cystatin C reflects the level of tubular epithelial damage.[2,3]

Patients with chronic kidney disease are at high risk for developing cardiovascular disease and cardiovascular events. In recent years Cystatin C has emerged as a potential marker for cardiovascular risk.[4,5]

Cystatin C has also been proposed to have a role in modification of the proteolytic system in cancer. Elevated serum cystatin C levels in cancer patents, are linked to meager outcome of disease.[6]

Each vial contains 50 μg of SILu™Lite CST3 standard, lyophilized from a Tris buffered solution, pH 8.0, containing 10 mM methionine as stabilizer. Vial content is determined according to protein absorbance at 280 nm (ε = 0.877).

Purity: ≥95% (SDS-PAGE)

UniProt: P01034

Sequence Information:
SSPGKPPRLVGGPMDASVEEEGVRRALDFAVGEYN
KASNDMYHSRALQVVRARKQIVAGVNYFLDVELGRT
TCTKTQPNLDNCPFHDQPHLKRKAFCSFQIYAVPWQ
GTMTLSKSTCQDA

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

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2. Åkerblom, A., Biomarkers of renal function in Acute Coronary Syndromes. *Digital Comprehensive Summaries of Uppsala Dissertations from the Faculty of Medicine* (2013).
3. Jiang, R. et al., Detection of Cystatin C biomarker for a clinical measurement of renal disease by developed ELISA diagnostic kits. *J.Trans.Med.,***12**, 1-8 (2014).
4. Angelidis, C. et al., Cystatin–C: an emerging biomarker in cardiovascular diseases. *Curr. Top. Med. Chem.,* 13(2), 164-179 (2013).
5. Taglieri, N. et al., Cystatin C and the cardiovascular risk. *Clin. Chem*., **55(11)**, 1932-1943 (2009).
6. Hammouda, N.E. et al., Serum Cystatin C as biomarker in Diffuse Large b-cell Lymphoma. *Sci. Pharm., **85*(1)**, 1-10 (2017).

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