Data Sheet (Cat.No.TMPY-01370)

TargetMol

Cystatin C Protein, Mouse, Recombinant (His)

General Information

Synonyms:	cystatin C;CysC
Protein Construction:	A DNA sequence encoding the mouse CST3 (NP_034106.2) precursor (Met 1-Ala 140) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Ala 21
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	P21460
Molecular Weight:	15 kDa (predicted); 15, 18 & 21-24 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by its ability to inhibit papain cleavage of a fluorogenic peptide substrate Z-FR-AMC. The IC50 value is < 25 nM.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM HEPES, 150 mM NaCl, pH 7.0.Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Cystatin C, also known as Cystatin-3 (CST3) is a secreted type 2 cysteine protease inhibitor synthesized in all nucleated cells, has been proposed as a replacement for serum creatinine for the assessment of renal function, particularly to detect small reductions in glomerular filtration rate. The mature, active form of human cystatin C is a single non-glycosylated polypeptide chain consisting of 120 amino acid residues, with a molecular mass of 13,343-13,359 Da, and containing four characteristic disulfide-paired cysteine residues. Cystatin C is a low-

molecular-weight protein that has been proposed as a marker of renal function that could replace creatinine. Indeed, the concentration of Cystatin C is mainly determined by glomerular filtration and is particularly of interest in clinical settings where the relationship between creatinine production and muscle mass impairs the clinical performance of creatinine. Since the last decade, numerous studies have evaluated its potential use in measuring renal function in various populations. More recently, other potential developments for its clinical use have emerged. In almost all the clinical studies, Cystatin C demonstrated a better diagnostic accuracy than serum creatinine in discriminating normal from impaired kidney function, but controversial results have been obtained by comparing this protein with other indices of kidney disease, especially serum creatinine-based equations, such as early atherosclerosis, Alzheimer's dementia, vascular aneurysms, hyperhomocysteinaemia and other neurodegenerative diseases. Cystatin C could be a useful clinical tool to identify HIV-infected persons. In addition, its expression is up-regulated in malignance of certain tumor progression.

Reference

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Sronie-Vivien S,et al.(2008) Cystatin C: current position and future prospects. Clin Chem Lab Med. 46(12): 1664-86.

Taglieri N,et al.(2009) Cystatin C and cardiovascular risk. Clin Chem. 55(11): 1932-43.

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