

# Human Mucin-1 / MUC-1 Protein (Fc Tag)

Catalog Number: 12123-H02H



**Sino Biological Inc.**  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

ADMCKD; ADMCKD1; CA15-3; CD227; EMA; H23AG; KL-6; MAM6; MCD; MCKD; MCKD1; MUC-1; MUC-1/SEC; MUC-1/X; MUC1/ZD; Mucin 1; PEM; PEMT; PUM; CD227; EMA; Muc-1

### Protein Construction:

A DNA sequence encoding the human MUC1 isoform 2 (NP\_001018016.1) extracellular domain (Met 1-Gly 167) was fused with the Fc region of human IgG1 at the C-terminus.

**Source:** Human

**Expression Host:** Human Cells

## QC Testing

**Purity:** > 90 % as determined by SDS-PAGE

### Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Ser 33

### Molecular Mass:

The recombinant human MUC1/Fc is a disulfide-linked homodimer. The reduced monomer consists of 376 amino acids after removal the signal peptide and has a predicted molecular mass of 42 kDa. As a result of glycosylation, rh MUC1/Fc monomer migrates as an approximately 55-60 kDa band in SDS-PAGE under reducing conditions.

### Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

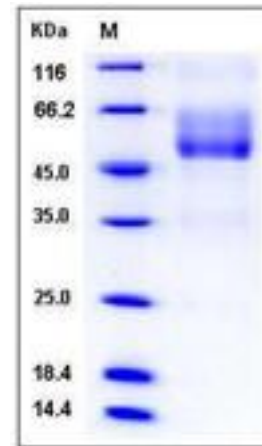
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

Mucin 1, cell surface associated (MUC1) or polymorphic epithelial mucin (PEM) is a membrane-bound protein that is a member of the mucin family. Mucins are O-glycosylated proteins that play an essential role in forming protective mucous barriers on epithelial surfaces. These proteins also play a role in intracellular signaling. This protein is expressed on the apical surface of epithelial cells that line the mucosal surfaces of many different tissues including lung, breast stomach and pancreas. MUC-1/CC1/CD227 Exclusively located in the apical domain of the plasma membrane of highly polarized epithelial cells. After endocytosis, internalized and recycled to the cell membrane. This protein is proteolytically cleaved into alpha and beta subunits that form a heterodimeric complex. The N-terminal alpha subunit functions in cell-adhesion and the C-terminal beta subunit is involved in cell signaling. Overexpression, aberrant intracellular localization, and changes in glycosylation of this protein have been associated with carcinomas. The alpha subunit has cell adhesive properties. MUC-1/CC1/CD227 Can act both as an adhesion and an anti-adhesion protein. This protein May provide a protective layer on epithelial cells against bacterial and enzyme attack. The beta subunit contains a C-terminal domain which is involved in cell signaling, through phosphorylations and protein-protein interactions. MUC-1/CC1/CD227 participated in modulates signaling in ERK, SRC and NF-kappa-B pathways. In activated T-cells, MUC-1/CC1/CD227 influences directly or indirectly the Ras/MAPK pathway. MUC-1/CC1/CD227 Promotes tumor progression and regulates TP53-mediated transcription and determines cell fate in the genotoxic stress response. Binds, together with KLF4, the PE21 promoter element of TP53 and represses TP53 activity.

## References

1. Brayman M, *et al.* (2004) MUC1: a multifunctional cell surface component of reproductive tissue epithelia. *Reprod Biol Endocrinol* 2: 4.
2. Schroeder J A, *et al.* (2001) Transgenic MUC1 interacts with epidermal growth factor receptor and correlates with mitogen-activated protein kinase activation in the mouse mammary gland. *J Biol Chem.* 276 (16): 13057-64.
3. Li Y, *et al.* (2001) The epidermal growth factor receptor regulates interaction of the human DF3/MUC1 carcinoma antigen with c-Src and beta-catenin. *J Biol Chem.* 276 (38): 35239-42.

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