

**Synonym**

M-CSF,CSF-1,Lanimostim

**Source**

Biotinylated Human M-CSF, His,Avitag(MCF-H82E6) is expressed from human 293 cells (HEK293). It contains AA Glu 33 - Arg 255 (Accession # [P09603-1](#) ).

Predicted N-terminus: Glu 33

**Molecular Characterization**

M-CSF(Glu 33 - Arg 255)  
P09603-1

Poly-his

Avi

This protein carries a polyhistidine tag at the C-terminus, followed by an Avi tag (Avitag™)

The protein has a calculated MW of 28.8 kDa. The protein migrates as 35-48 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

**Labeling**

*Biotinylation of this product is performed using Avitag™ technology. Briefly, the single lysine residue in the Avitag is enzymatically labeled with biotin.*

**Protein Ratio**

Passed as determined by the HABA assay / binding ELISA.

**Endotoxin**

Less than 1.0 EU per µg by the LAL method.

**Purity**

>90% as determined by SDS-PAGE.

**Formulation**

Lyophilized from 0.22 µm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

**Reconstitution**

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

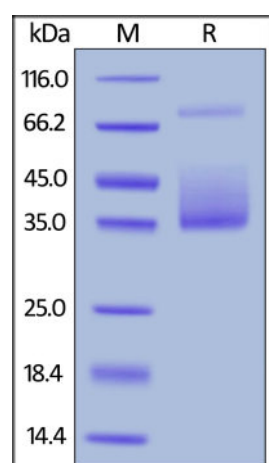
**Storage**

For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

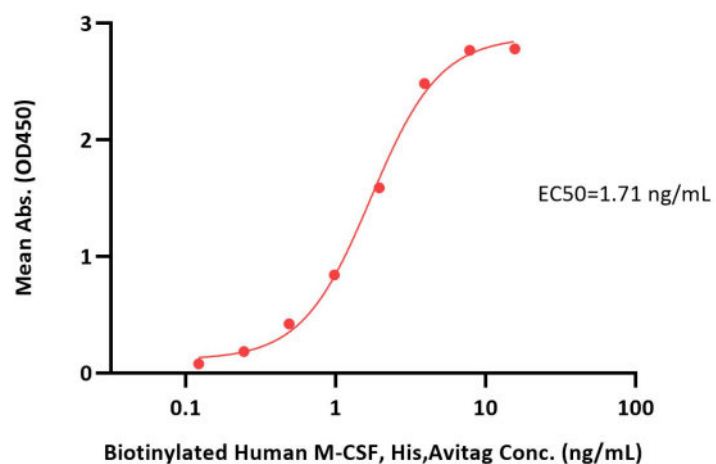
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

**SDS-PAGE**

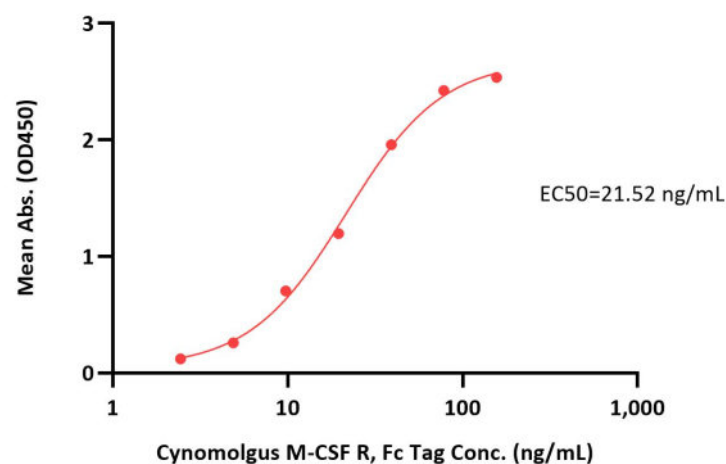
Biotinylated Human M-CSF, His,Avitag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90%.

**Bioactivity-ELISA**

**Biotinylated Human M-CSF, His,Avitag ELISA**  
0.2 µg of Human M-CSF R, Fc Tag per well



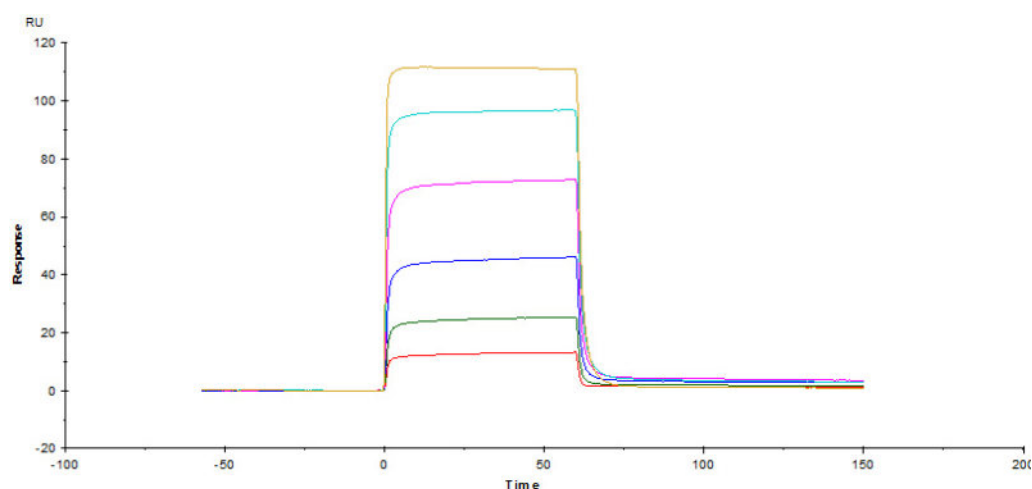
**Biotinylated Human M-CSF, His,Avitag ELISA**  
0.2 µg of Biotinylated Human M-CSF, His,Avitag per well



Immobilized Human M-CSF R, Fc Tag (Cat. No. CSR-H5258) at 2 µg/mL (100 µL/well) can bind Biotinylated Human M-CSF, His,Avitag (Cat. No. MCF-H82E6) with a linear range of 0.1-2 ng/mL (QC tested).

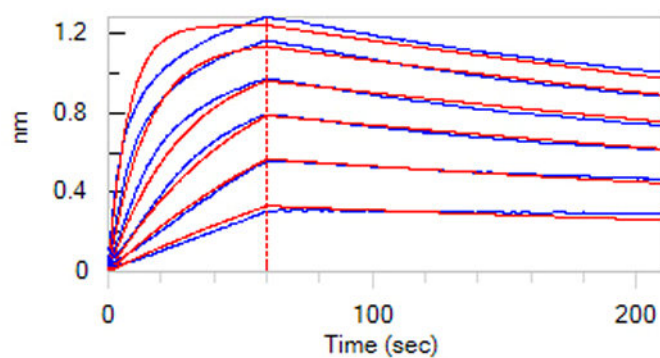
Immobilized Biotinylated Human M-CSF, His,Avitag (Cat. No. MCF-H82E6) at 2 µg/mL (100 µL/well) on streptavidin precoated (0.2 µg/well) plate, can bind Cynomolgus M-CSF R, Fc Tag (Cat. No. CSR-C5252) with a linear range of 1-39 ng/mL (Routinely tested).

**Bioactivity-SPR**



Biotinylated Human M-CSF, His,Avitag (Cat. No. MCF-H82E6) immobilized on SA Chip can bind Human M-CSF R, His Tag (Cat. No. CSR-H5228) with an affinity constant of 0.309 µM as determined in a SPR assay (Biacore T200) (Routinely tested).

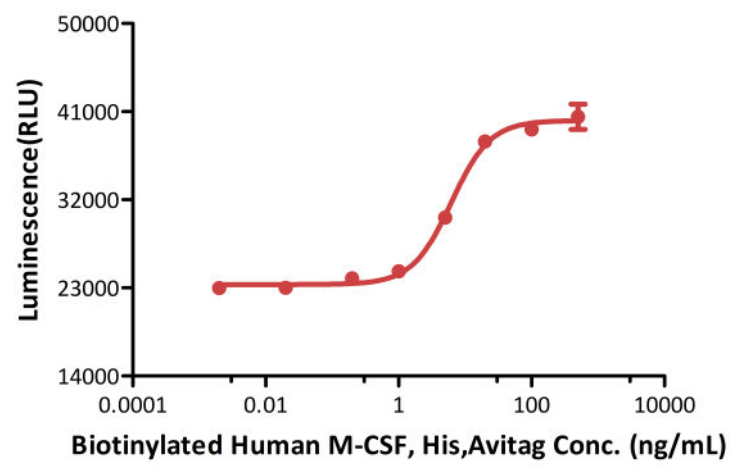
**Bioactivity-BLI**



Loaded Biotinylated Human M-CSF, His,Avitag (Cat. No. MCF-H82E6) on SA Biosensor, can bind Human M-CSF R, Fc Tag, low endotoxin (Cat. No. CSR-H5258) with an affinity constant of 24.5 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

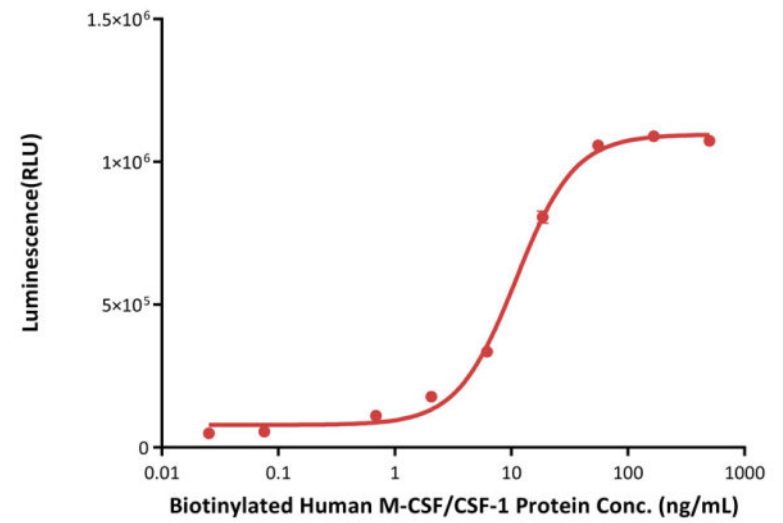
**Bioactivity-Bioactivity CELL BASE**

**Biotinylated Human M-CSF, His,Avitag stimulates proliferation of RAW264.7 cells**



Biotinylated Human M-CSF, His,Avitag (Cat. No. MCF-H82E6) stimulates proliferation of RAW264.7 cells. The EC50 for this effect is 6.20-7.15 ng/mL (Routinely tested).

**Biotinylated Human M-CSF/CSF-1 Protein stimulates proliferation of M-NFS-60**



The bio-activity of Biotinylated Human M-CSF / CSF-1 Protein, His,Avitag™ (Cat. No. MCF-H82E6) was determined by dose-dependent stimulation of the proliferation of M-NFS-60 cells. The EC50 for this effect is 10.91ng/mL (Routinely tested).

### Background

The colony stimulating factor 1 (CSF1), also known as macrophage colony-stimulating factor (M-CSF), is a secreted cytokine which influences hematopoietic stem cells to differentiate into macrophages or other related cell types. Eukaryotic cells also produce M-CSF in order to combat intercellular viral infection. It is one of the three experimentally described colony-stimulating factors. M-CSF binds to the colony stimulating factor 1 receptor. Macrophage colony-stimulating factor has been shown to interact with PIK3R2. M-CSF (or CSF-1) is a hematopoietic growth factor that is involved in the proliferation, differentiation, and survival of monocytes, macrophages, and bone marrow progenitor cells. Locally produced M-CSF in the vessel wall contributes to the development and progression of atherosclerosis.

### Clinical and Translational Updates

Please contact us via [TechSupport@acrobiosystems.com](mailto:TechSupport@acrobiosystems.com) if you have any question on this product.