Data Sheet (Cat.No.TMPY-00816)

TargetMol

GM-CSFR alpha Protein, Human, Recombinant (hFc)

General Information

Synonyms:	CSF2RAX;CSF2R;CD116;CSF2RY;GM-CSF-R-α;GM-CSF-R-alpha;GM-CSF Receptor α Protein; colony stimulating factor 2 receptor, alpha, low-affinity (granulocyte-macrophage);CSF2RAY; GMCSFR;GMR;SMDP4;CSF2RX;CDw116;colony stimulating factor 2 receptor, α, low-affinity (granulocyte-macrophage)
Protein Construction:	A DNA sequence encoding the extracellular domain (Met 1-Gly 320) of human GM-CSFRα (NP_006131.2) pro-protein was expressed with the C-terminal fused Fc region of human IgG1. Predicted N terminal: Glu 23
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P15509-1
Molecular Weight:	61.2 kDa (predicted)

QC Testing

Biological Activity:	Measured by its ability to inhibit GM-CSF dependent proliferation of TF-1 human erythroleukemic cells. The ED50 for this effect is typically 10-15 μg/ml.
Purity:	> 90 % 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 PBS, pH 7.4. 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

CD116/GM-CSFR has been preferentially associated with M4, M5 subtype of AML but is not specific. The cluster of

differentiation (cluster of designation) (often abbreviated as CD) is a protocol used for the identification and investigation of cell surface molecules present on white blood cells initially but found in almost any kind of cell of the body, providing targets for immunophenotyping of cells. Physiologically, CD molecules can act in numerous ways, often acting as receptors or ligands (the molecule that activates a receptor) important to the cell. A signal cascade is usually initiated, altering the behavior of the cell (see cell signaling). Some CD proteins do not play a role in cell signaling, but have other functions, such as cell adhesion. CD116/GM-CSFR is the alpha subunit of the heterodimeric receptor for colony stimulating factor 2, a cytokine which controls the production, differentiation, and function of granulocytes and macrophages. The encoded protein is a member of the cytokine family of receptors. CD116/GM-CSFR is found in the pseudoautosomal region (PAR) of the X and Y chromosomes.

Reference

Sjöblom C,et al.(2002) Granulocyte-macrophage colony-stimulating factor (GM-CSF) acts independently of the beta common subunit of the GM-CSF receptor to prevent inner cell mass apoptosis in human embryos. Biol Reprod. 67(6): 1817-23.

Goldstein JI,et al.(2011) Defective leukocyte GM-CSF receptor (CD116) expression and function in inflammatory bowel disease. Gastroenterology. 141(1): 208-16.

Saulle E,et al.(2009) Colocalization of the VEGF-R2 and the common IL-3/GM-CSF receptor beta chain to lipid rafts leads to enhanced p38 activation. Br J Haematol. 145(3): 399-411.