

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived
Leu20-Gly320, with a C-terminal 10-His tag
Accession # P15509

N-terminal Sequence Analysis Leu20

Predicted Molecular Mass 36.2 kDa

SPECIFICATIONS

SDS-PAGE 60-70 kDa, reducing conditions

Activity Measured by its ability to inhibit GM-CSF-dependent proliferation of TF-1 human erythroleukemic cells.
The ED₅₀ for this effect is 1.25-5 μ g/mL in the presence of 40 pg/mL of rhGM-CSF.

Endotoxin Level <0.01 EU per 1 μ g of the protein by the LAL method.

Purity >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 μ m filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 500 μ g/mL in PBS.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Granulocyte macrophage colony stimulating factor receptor alpha (GM-CSF R α), also known as CD116, is a component of the receptor complex that mediates cellular responses to GM-CSF. GM-CSF promotes the differentiation and mobilization of granulocyte-macrophage, erythroid, megakaryocyte, and eosinophil progenitors. It enhances the activation of myeloid cell effector functions and plays a role in the development of Th1 biased immune responses, allergic inflammation, and autoimmunity (1 - 4). Mature human GM-CSF R α is an 80 kDa type I transmembrane glycoprotein that consists of a 298 amino acid (aa) extracellular domain (ECD) with two fibronectin type III domains and a juxtamembrane WSXWS motif, a 26 aa transmembrane segment, and a 54 aa cytoplasmic domain (5). Within the ECD, human GM-CSF R α shares approximately 33% aa sequence identity with mouse and rat GM-CSF R α . Alternate splicing of human GM-CSF R α generates several additional isoforms that lack the cytoplasmic and/or transmembrane regions. Soluble forms of the receptor retain the ability to bind GM-CSF (6, 7). GM-CSF R α is expressed on hematopoietic stem cells, progenitor and differentiated cells in the myeloid lineage, vascular endothelial cells, placenta, and non-hematopoietic solid tumor cells (8). GM-CSF R α associates with the common beta chain/CD131 (β_c), a 135 kDa transmembrane protein that is also the signal transducing component of the receptors for IL-3 and IL-5 (9, 10). Association with β_c converts GM-CSF R α from a low affinity to a high affinity receptor for GM-CSF (9 - 11). The shared usage of β_c underlies the synergism between GM-CSF, IL-3, and IL-5 in their effects on myeloid cell differentiation and activation (1, 2).

References:

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