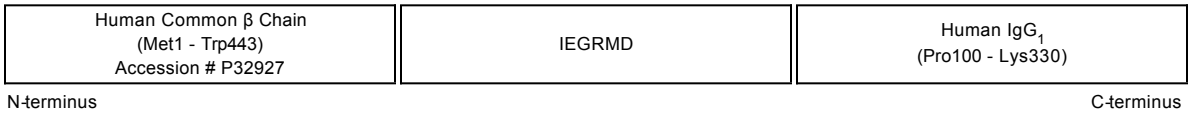
Recombinant Human Common β Chain Fc Chimera

Catalog Number: 906-CB

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived



N-terminal Sequence Analysis	Gly23 & Glu25
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	74.6 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	85 - 92 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When recombinant human (rh) GM-CSF Rα is present at 0.5 µg/mL, it binds to rhCommon β Chain/GM-CSF Rβ Fc Chimera in the presence of rhGM-CSF. The concentration of rhCommon β Chain/GM-CSF Rβ Fc Chimera that produces 50% of the optimal binding response was found to be approximately 3–12 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/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

The common β chain (βc) is also known as GM–CSF Rβ (granulocyte-macrophage colony stimulating factor receptor beta subunit), IL-3 Rβ, and IL-5 Rβ (gene name CSF2RB and designated CD131) (1, 2). It is a 120 – 135 kDa type I transmembrane protein that associates with the ligand-specific IL-3 Rα on T cells and other cells, IL–5 Rα on eosinophils or GM–CSF Rα on myeloid cells, to form high affinity receptor complexes (1, 2). The 897 amino acid (aa) human βc contains a 16 aa signal sequence, a 427 aa extracellular domain (ECD) with two fibronectin type III domains, a transmembrane sequence, and a 437 aa cytoplasmic domain (2, 3). Within the ECD, human βc shares 57 – 68% aa sequence identity with mouse, rat, equine, porcine, bovine and canine βc. Complexes of ligand with its specific α subunit then bind pre–formed βc dimers, creating 2:2:2 hexamers (and probably 4:4:4 dodecamers) for signaling (3). βc phosphorylation and binding of Jak2 imparts growth and survival signals. Except for eosinophils, βc is primarily involved when rapid production of leukocytes is needed, rather than for developmental or steady-state cell production (1). βc also associates with other receptors, forming heteroreceptor complexes that allow βc complexes to influence the signaling pathways activated by the associated receptor (1). βc thus enhances angiogenesis (when associated with VEGF R2/KDR/Flt-1 or β1 integrins), cell protection (with Erythropoietin R), and synergistic growth of stem cells (with SCF R/c–kit) (4 – 9). Defective production of βc in humans is a cause of pulmonary alveolar proteinosis (10).

References:

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