Recombinant Human CCL3/MIP-1α Isoform LD78a

Catalog Number: 270-LD/CF

DESCRIPTION

Source	*E. coli*-derived Ala27-Ala92 Accession # P10147
N-terminal Sequence Analysis	Ala27
Predicted Molecular Mass	7.5 kDa

SPECIFICATIONS

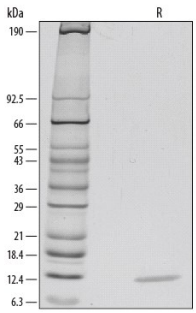
Activity	Measured by its ability to chemoattract 2-day cultured human monocytes. The ED_{50} for this effect is typically 2–10 ng/mL. Measured by its ability to chemoattract BaF3 mouse pro-B cells transfected with human CCR5. The ED_{50} for this effect is typically 3–10 ng/mL.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile 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.

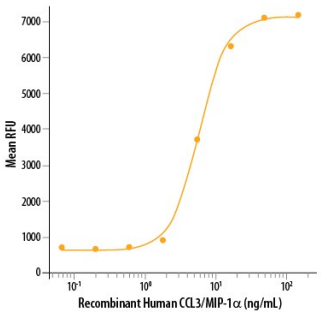
DATA

SDS-PAGE



1 µg/lane of Recombinant Human CCL3/MIP-1α Isoform LD78a was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 12 kDa.

Bioactivity



Recombinant Human CCL3/MIP-1α Isoform LD78a (Catalog # 270-LD/CF) chemoattracts the BaF3 mouse pro-B cells transfected with human CCR5. The ED50 for this effect is typically 3-10 ng/mL.

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BACKGROUND

CCL3, also known as macrophage inflammatory protein 1 alpha (MIP-1α) and LD78, is a member of the β or CC subfamily of chemokines and is closely related to CCL4/MIP-1β. Chemokines comprise a large family of small secreted proteins that are involved in immune and inflammatory responses. CCL3 expression can be induced in a variety of hematopoietic cells, fibroblasts, smooth muscle cells, and epithelial cells (1). Mature human CCL3 shares 70%-74% amino acid sequence identity with mouse, rat, and cotton rat CCL3 (2). CCL3 is an approximately 8 kDa chemokine that forms complexes with sulfated proteoglycans (3, 4). In a reversible process, CCL3 associates into noncovalently-linked dimers which then form tetramers and high molecular weight polymers (5, 6). These complexes of CCL3 are protected from proteolytic digestion by insulin degrading enzyme (IDE) which can cleave the monomeric chemokine (6). CCL3 exerts its biological functions through interactions with CCR1, CCR3, and CCR5 (1). It is cleared from the extracellular space by internalization *via* the decoy chemokine receptor D6 (7). CCL3 promotes the chemoattraction, adhesion to activated vascular endothelium, and cellular activation of many hematopoietic cell types including activated T cells, NK cells, neutrophils, monocytes, immature dendritic cells, and eosinophils (1, 8-10). CCL3 is also known as stem cell inhibitor (SCI) and can inhibit the proliferation of hematopoietic progenitor cells (3). CCL3 bioactivity contributes to tumor metastasis and the inflammatory components of viral infection, rheumatoid arthritis, and hepatitis (11-14), although it also can suppress the replication of HIV (15). CCL3 additionally promotes hyperalgesia by sensitizing sensory neurons to TRPV1-mediated noxious stimulation (16).

References:

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