

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived rat CCL2/JE/MCP-1 protein
Gln24-Asn148
Accession # P14844

N-terminal Sequence Analysis No results obtained: Gln24 predicted

Predicted Molecular Mass 14 kDa

SPECIFICATIONS

SDS-PAGE 25-35 kDa, reducing conditions

Activity Measured by its ability to chemoattract BaF3 mouse pro-B cells transfected with human CCR2A.
The ED₅₀ for this effect is 30-150 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 with Trehalose and with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

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

Rat CCL2 is a member of the β (C-C) subfamily of chemokines that is a chemoattractant for monocytes and basophils but not eosinophils or neutrophils (1-4). Rat CCL2 is secreted as a 14 kDa glycoprotein monomer (5) but noncovalent dimers probably occur (1). The first five amino acids of the mature protein are essential for activity; deletion of the N-terminal glutamine, which is pyrrolidone carboxylic acid-modified, dramatically decreases activity on basophils and, surprisingly, stimulates eosinophil chemotaxis (4). The rat CCL2 propeptide shares 82% amino acid (a.a.) identity with mouse CCL2 over the 148 a.a. sequence and 57%, 52%, 52%, 52% and 52% a.a. identity with equine, human, porcine, canine and guinea pig CCL2, respectively, over the first 100 aa. Rat and mouse CCL2 have a 49 aa extension at the C-terminus as compared to human CCL2. Fibroblasts, tumor cells, smooth muscle cells, endothelial cells, and mononuclear phagocytes can produce CCL2 either constitutively or upon mitogenic stimulation. CCL2 is best known as a chemotactic agent for mononuclear cells. It also induces enzyme and cytokine release by monocytes, NK cells and lymphocytes, and histamine release by basophils, primarily due to interaction with CCR2 receptors on these cells. Additionally, it is believed to reduce IL-12 production by dendritic cells and promote a Th2 phenotype in CD4⁺ T cells. The role of CCL2 in recruiting monocytes to sites of inflammation is implicated in the pathology of multiple sclerosis, atherosclerosis and allergic asthma (6).

References:

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3. Lu, B. *et al.* (1998) J. Exp. Med. **187**:601.
4. Weber, M. *et al.* (1996) J. Exp. Med. **183**:681.
5. Yoshimura, T. *et al.* (1991) Biochem. Biophys. Res. Commun. **174**:504.
6. Daly, C. *et al.* (2003) Microcirculation **10**:247.