

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat CCL3/MIP-1 α in direct ELISAs.
Source	Monoclonal Mouse IgG ₁ Clone # 769324
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant rat CCL3/MIP-1 α Ala24-Ala92 Accession # P50229
Endotoxin Level	<0.10 EU per 1 μ g of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μ m filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Western Blot	2 μ g/mL	See Below
Neutralization	Measured by its ability to neutralize CCL3/MIP-1 α -induced chemotaxis in the BaF3 mouse pro-B cell line transfected with human CCR5. The Neutralization Dose (ND ₅₀) is typically 0.075-0.45 μ g/mL in the presence of 10 ng/mL Recombinant Rat CCL3/MIP-1 α .	

DATA

Western Blot

Detection of Rat CCL3/MIP-1 α by Western Blot. Western blot shows lysates of NR8383 rat alveolar macrophage cell line untreated (-) or treated (+) with 10 μ g/mL LPS for 4 hours. PVDF membrane was probed with 2 μ g/mL of Mouse Anti-Rat CCL3/MIP-1 α Monoclonal Antibody (Catalog # MAB66252) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for CCL3/MIP-1 α at approximately 12 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Neutralization

Chemotaxis Induced by CCL3/MIP-1 α and Neutralization by Rat CCL3/MIP-1 α Antibody. Recombinant Rat CCL3/MIP-1 α (Catalog # 6625-MA) induces chemotaxis in the BaF3 mouse pro-B cell line transfected with human CCR5 in a dose-dependent manner (orange line). Chemotaxis elicited by Recombinant Rat CCL3/MIP-1 α (10 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Rat CCL3/MIP-1 α Monoclonal Antibody (Catalog # MAB66252). The ND₅₀ is typically 0.075-0.45 μ g/mL.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

CCL3, also known as macrophage inflammatory protein 1 alpha (MIP-1 α) and LD78, is a member of the β or CC subfamily of chemokines and is closely related to CCL4/MIP-1 β . 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 rat CCL3 shares 74%, 91%, and 88% amino acid sequence identity with human, mouse, and cotton rat CCL3, respectively (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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