Mouse CCL3/MIP-1α Antibody

Monoclonal Rat IgG_{2B} Clone # 756613

Catalog Number: MAB4501

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse CCL3/MIP-1α in direct ELISAs and Western blots. In direct ELISAs, 100% cross-reactivity with recombinant rat CCL3 and 50% cross-reactivity with recombinant human CCL3 is observed. No cross-reactivity with recombinant canine CCL3, recombinant cotton rat CCL3, recombinant mouse (rm) CCL4/MIP-1 beta, or rmCCL5 is observed.
Source	Monoclonal Rat IgG_{2B} Clone # 756613
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant mouse CCL3/MIP−1α Ala24-Ala92 Accession # P10855
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

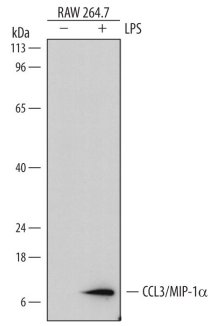
APPLICATIONS

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	1 µg/mL	See Below
Immunocytochemistry	8-25 µg/mL	See Below

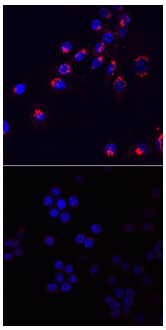
DATA

Western Blot



Detection of Mouse CCL3/MIP-1α by Western Blot. Western blot shows lysates of RAW 264.7 mouse monocyte/macrophage cell line untreated (-) or treated (+) with 10 µg/mL LPS for 4 hours. PVDF membrane was probed with 1 µg/mL of Rat Anti-Mouse CCL3/MIP-1α Monoclonal Antibody (Catalog # MAB4501) followed by HRP-conjugated Anti-Rat IgG Secondary Antibody (Catalog # HAF005). A specific band was detected for CCL3/MIP-1α at approximately 8 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunocytochemistry



CCL3/MIP-1α in RAW 264.7 Mouse Cell Line. CCL3/MIP-1α was detected in immersion fixed RAW 264.7 mouse monocyte/macrophage cell line stimulated (upper panel) or not (lower panel) with LPS using Rat Anti-Mouse CCL3/MIP-1α Monoclonal Antibody (Catalog # MAB4501) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Rat IgG Secondary Antibody (red; Catalog # NL013) and counterstained with DAPI (blue). Specific staining was localized to the cytoplasm of stimulated cells. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

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.** ● 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.

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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 mouse CCL3 shares 73%, 91%, and 82% amino acid sequence identity with human, rat, 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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