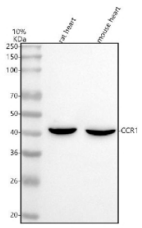
CCR1 Antibody / C-C chemokine receptor type 1 (FY13339)

Catalog No.	Formulation	Size
FY13339	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P51675
Applications	Western Blot : 0.25-0.5ug/ml
Limitations	This CCR1 antibody is available for research use only.



Western blot analysis of CCR1 using anti-CCR1 antibody. Lane 1: rat heart tissue lysates, Lane 2: mouse heart tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-CCR1 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A specific band was detected for CCR1 at approximatel 41 kDa. The expected molecular weight of CCR1 is ~41 kDa.

Description

CCR1 antibody detects C-C chemokine receptor type 1, a G protein-coupled receptor (GPCR) encoded by the CCR1 gene on chromosome 3p21.31. CCR1 is a membrane receptor primarily expressed on monocytes, macrophages, neutrophils, and T lymphocytes, where it mediates chemotactic responses to inflammatory chemokines. As part of the beta chemokine receptor family, CCR1 plays a central role in immune cell trafficking, inflammation, and host defense. High expression levels are observed in bone marrow, spleen, and peripheral blood leukocytes, highlighting its function in immune surveillance and leukocyte migration.

CCR1 binds multiple chemokines, including CCL3 (MIP-1alpha), CCL5 (RANTES), and CCL7 (MCP-3), triggering intracellular signaling cascades that guide immune cells toward infection or inflammation sites. Ligand binding activates G protein-mediated signaling through phospholipase C, PI3K, and MAPK pathways, resulting in cytoskeletal rearrangement, integrin activation, and chemotaxis. CCR1 also contributes to immune homeostasis by regulating leukocyte retention and activation in tissue microenvironments.

Structurally, CCR1 consists of seven transmembrane alpha-helices characteristic of GPCRs, with extracellular loops for ligand recognition and an intracellular C-terminal tail that interacts with G proteins and regulatory kinases. CCR1 belongs to the C-C chemokine receptor family, which includes CCR2-CCR5, all mediating overlapping but distinct immune signaling profiles. Co-localization studies show CCR1 residing in lipid rafts and endocytic vesicles, allowing rapid receptor internalization and recycling after ligand stimulation.

Functionally, CCR1 regulates leukocyte trafficking during inflammation, autoimmune response, and hematopoiesis. It is critical for monocyte and neutrophil recruitment to sites of infection and tissue injury. The receptor also participates in bone remodeling by influencing osteoclast differentiation through CCL5 signaling. In the nervous system, CCR1 modulates neuroinflammation by controlling microglial migration and cytokine release.

Dysregulation of CCR1 contributes to various pathological conditions including rheumatoid arthritis, multiple sclerosis, and chronic obstructive pulmonary disease (COPD). Overexpression enhances leukocyte infiltration and tissue inflammation, whereas pharmacological inhibition of CCR1 has shown therapeutic potential in autoimmune and fibrotic disorders. Pathway involvement includes chemokine-mediated signaling, GPCR activation, and NF-kappaB inflammatory pathways. During development, CCR1 expression is upregulated in hematopoietic progenitors and inflammatory cells responding to infection.

The CCR1 antibody from NSJ Bioreagents is ideal for studies of chemokine receptor biology, leukocyte trafficking, and inflammatory disease mechanisms.

Application Notes

Optimal dilution of the CCR1 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of mouse CCR1 was used as the immunogen for the CCR1 antibody.

Storage

After reconstitution, the CCR1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.