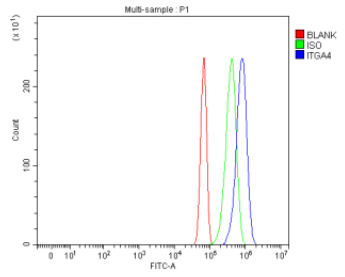
Itga4 Antibody / Integrin alpha 4 (FY12338)

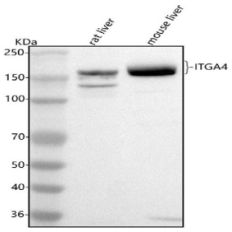
Catalog No.	Formulation	Size
FY12338	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Mouse, Rat
Format	Lyophilized
Host	Rabbit
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	Q00651
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This Itga4 antibody is available for research use only.



Flow Cytometry analysis of NIH/3T3 cells using anti-Integrin Itga4 antibody. Overlay histogram showing NIH/3T3 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-Integrin Itga4 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample (Red line) was also used as a control.



Western blot analysis of Integrin Itga4 using anti-Integrin Itga4 antibody. Lane 1: rat liver tissue lysates, Lane 2: mouse liver 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-Integrin Itga4 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. The expected molecular weight of Itga4 is at ~116 kDa but may be observed at higher molecular weights due to glycosylation.

Description

The Itga4 antibody is developed to detect Integrin alpha-4, a critical adhesion molecule encoded by the ITGA4 gene. Integrin alpha-4 belongs to the integrin family of cell surface receptors that mediate communication between cells and the extracellular matrix. It functions as part of a heterodimeric complex, most commonly pairing with Integrin beta-1 or Integrin beta-7 to form receptors such as very late antigen-4 (VLA-4) and alpha4beta7. These receptors regulate cell adhesion, migration, and immune cell trafficking. The Itga4 antibody is used to explore how Integrin alpha-4 contributes to immune surveillance, inflammatory signaling, and tissue remodeling in both physiological and pathological conditions.

Integrin alpha-4 is expressed in a variety of cells, including lymphocytes, monocytes, eosinophils, and neural progenitor cells. Its ability to bind ligands such as vascular cell adhesion molecule 1 (VCAM1), mucosal addressin cell adhesion molecule 1 (MADCAM1), and fibronectin enables leukocytes to adhere to endothelial surfaces and migrate into inflamed tissues. This function is central to immune defense and inflammation. The Itga4 antibody allows researchers to visualize Integrin alpha-4 expression at the protein level, confirming its presence on immune cell membranes and quantifying how receptor engagement changes under different biological conditions.

Integrin alpha-4 is also significant in developmental processes. During embryogenesis, it supports placental and cardiac development, and in the nervous system, it facilitates neural crest cell migration. Aberrant regulation of Integrin alpha-4 has been implicated in a range of human diseases. Overexpression can contribute to chronic inflammatory conditions such as multiple sclerosis, asthma, and inflammatory bowel disease by promoting immune cell infiltration into sensitive tissues. Conversely, decreased expression may impair normal tissue repair and immune responsiveness. The Itga4 antibody is thus an essential tool for understanding receptor biology and developing therapeutic strategies targeting Integrin alpha-4 signaling.

In oncology, Integrin alpha-4 plays emerging roles in tumor growth, metastasis, and angiogenesis. Its engagement with the extracellular matrix supports tumor cell adhesion and migration, processes that drive metastatic spread. Blocking antibodies and small-molecule inhibitors directed against Integrin alpha-4 are being studied as therapeutic agents to limit tumor progression and inflammatory cell recruitment. The Itga4 antibody from NSJ Bioreagents provides researchers with a consistent and reliable means to evaluate receptor expression, enabling translational studies linking integrin signaling to disease mechanisms and drug response.

Applications for the Itga4 antibody include western blotting to measure protein levels, flow cytometry to quantify surface expression on immune populations, and immunohistochemistry to detect tissue distribution. These techniques provide insight into receptor regulation and allow mapping of Integrin alpha-4 across different biological models. In mechanistic research, the Itga4 antibody can help determine how receptor clustering influences downstream signaling cascades involving FAK, Src, and MAPK pathways. Such studies deepen understanding of cell adhesion, migration, and signal transduction within dynamic tissue environments.

By integrating these experimental approaches, the Itga4 antibody serves as a cornerstone for investigating how Integrin alpha-4 governs key physiological functions and contributes to pathological inflammation, cancer, and autoimmune disease. The reliable specificity and quality of this reagent make it an indispensable component of molecular and cell biology workflows focused on integrin-mediated adhesion and signaling. Continued use of the Itga4 antibody supports

research aimed at identifying new therapeutic targets and refining clinical interventions that modulate integrin function to restore healthy immune balance.

Application Notes

Optimal dilution of the Itga4 antibody should be determined by the researcher.

Immunogen

E.coli-derived mouse Integrin Alpha 4/Itga4 recombinant protein (Position: Y41-D963) was used as the immunogen for the Itga4 antibody.

Storage

After reconstitution, the Itga4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.