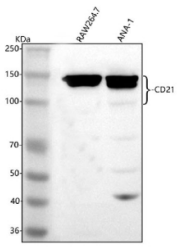
CD21 Antibody / Complement receptor type 2 (FY12216)

Catalog No.	Formulation	Size
FY12216	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	Human, Mouse
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	P20023
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This CD21 antibody is available for research use only.



Western blot analysis of CD21/CR2 using anti-CD21 antibody. Lane 1: mouse Raw264.7 whole cell lysates, Lane 2: mouse Ana-1 whole cell 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-CD21 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 band size for CD21/CR2 is at 110-120 kDa (multiple isoforms), but it may be observed at higher molecular weights due to glycosylation.

Description

CD21 antibody detects Complement receptor type 2 (CR2), encoded by the CR2 gene on chromosome 1q32.2. CD21 antibody is widely used in immunology research to study complement regulation, B cell activation, and Epstein-Barr virus (EBV) infection. CD21 is a receptor for complement component C3d and is expressed on mature B cells, follicular dendritic cells, and some epithelial cells. It bridges innate and adaptive immunity by linking complement recognition with B cell receptor signaling.

Structurally, CD21 is a type I membrane glycoprotein of ~145 kDa composed of 15-16 short consensus repeat (SCR) domains in its extracellular region, a single transmembrane segment, and a cytoplasmic tail involved in signaling. The extracellular domains bind complement fragments C3d, C3dg, and iC3b, while also serving as receptors for EBV glycoprotein gp350/220. Alternative splicing generates isoforms with slightly different extracellular domain composition.

Functionally, CD21 lowers the threshold for B cell activation by binding complement-tagged antigens and co-ligating with the B cell receptor (BCR). This amplifies BCR signaling, enhances antigen uptake, and promotes humoral responses. CD21 also mediates EBV entry into B cells, as the virus exploits CD21 to establish infection. Researchers use CD21 antibody to study B cell biology, complement pathways, and viral pathogenesis.

Clinically, CD21 is implicated in autoimmunity, immunodeficiency, and cancer. Altered CD21 expression is observed in systemic lupus erythematosus and common variable immunodeficiency. As the EBV receptor, CD21 is essential for viral entry and persistence, linking it to EBV-associated malignancies including Burkitt lymphoma and nasopharyngeal carcinoma. Diagnostic use of CD21 antibody includes immunohistochemical staining of follicular dendritic cell networks and B cell subsets in tissue sections. NSJ Bioreagents offers CD21 antibody for use in immunology, virology, and pathology research.

Experimentally, CD21 antibody is applied in flow cytometry to identify B cell subsets, in immunohistochemistry to visualize follicular dendritic cell networks, and in western blotting to detect the ~145 kDa protein. Co-immunoprecipitation with CD21 antibody helps identify complement-binding partners and viral glycoprotein interactions.

Application Notes

Optimal dilution of the CD21 antibody should be determined by the researcher.

Immunogen

E.coli-derived human CD21/CR2 recombinant protein (Position: D76-N817) was used as the immunogen for the CD21 antibody.

Storage

After reconstitution, the CD21 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.