abcam

ab227668

# Anti-CD21 antibody [SP199]

Recombinant | RabMAb | 20ul selling size

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.6 Preservative: 0.1% Sodium azide Constituents: PBS, 1% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | SP199 |
| **Purification technique** | Affinity purification Protein A/G |
| **Concentration** | 0.045 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |
| **Purification notes** | Purified from TCS by protein A/G. |

## Reactivity data

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/20 - 1/100 |
| **Notes** | - |

### Predicted

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |
| **Notes** | - |

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/150 |
| **Notes** | - |

### Not recommended

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |
| **Notes** | - |

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/100 |
| **Notes** | Antigen retrieval: Boil tissue section in 10mM citrate buffer, pH 6.0 for 10 minutes followed by cooling at room temperature for 20 minutes. |

### Predicted

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | - |
| **Notes** | - |

# Target data

See full target information CR2

| | |
|---|---|
| **Function** | Serves as a receptor for various ligands including complement component CD3d, HNRNPU OR IFNA1 (PubMed:1849076, PubMed:21527715, PubMed:7753047). When C3d is bound to antigens, attaches to C3d on B-cell surface and thereby facilitates the recognition and uptake of antigens by B-cells (PubMed:21527715). This interaction enhances B-cell activation and subsequent immune responses. Forms a complex with several partners on the surface of B-cells including CD19, FCRL5 and CD81, to form the B-cell coreceptor complex that plays a crucial role in B-cell activation and signaling (PubMed:1383329, PubMed:30107486). Also induces specific intracellular signaling separately from the BCR and CD19 by activating the tyrosine kinase SRC, which then phosphorylates nucleolin/NCL and triggers AKT and GSK3 kinase activities in a SYK/CD19-independent manner (PubMed:12938232). Acts as a ligand for CD23 (FcepsilonRII), a low-affinity receptor for IgE, which is expressed on B-cells and other immune cells, and thus participates in the regulation of IgE production (PubMed:1386409). (Microbial infection) Acts as a receptor for Epstein-Barr virus. |

## Storage

| | |
|---|---|
| **Shipped at conditions** | Conditional Ambient |
| **Appropriate short-term storage duration** | 1-2 weeks |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Aliquoting information** | Upon delivery aliquot |
| **Storage information** | Avoid freeze / thaw cycle |

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | CD21 also known as complement receptor type 2 (CR2) or BU32 is a protein primarily expressed on the surface of B cells and some T cells. It functions as a receptor for complement component C3d EBV (Epstein-Barr Virus) and IFN-α. CD21 weighs approximately 145 kDa and belongs to the membrane protein family. Detection of CD21 can be done via immunohistochemistry (IHC) and blood tests. This marker is valuable for identifying cell populations that have roles in immune responses. |
| **Biological function summary** | Complement receptor type 2 is key in the immune system by facilitating B cell activation and proliferation. CD21 forms complexes with CD19 and CD81 |

| | |
|---|---|
| | increasing the sensitivity of B cells to antigens. This interaction enhances signal transduction enabling B lymphocytes to respond effectively to pathogens. The protein also plays a role in regulating immune tolerance and maintaining humoral immunity being important not only in immune defense but also in preventing autoimmunity. |
| **Pathways** | CD21 interacts with complement activation and immune response pathways. It connects with CD19 in a pivotal role where it further amplifies signaling in B lymphocytes. This interaction strengthens the downstream signaling of BCR (B cell receptor) important for antibody production. CD21 contributes to bridging the innate and adaptive immunological pathways by engaging components like C3d. |
| **Associated diseases and disorders** | CD21 shows significant relevance in systemic lupus erythematosus (SLE) and some B cell lymphomas. Deficiencies or mutations in CD21 can lead to defective immune responses and increased susceptibility to autoimmune conditions such as SLE where CD19 is also implicated. Furthermore in Epstein-Barr Virus infections CD21 serves as an entry receptor facilitating pathogen establishment which can result in chronic conditions or even malignancies. |

## Product promise

**Tested**

We have tested this species and application combination and it works. It is covered by our product promise.

**Expected**

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

**Predicted**

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

**Not recommended**

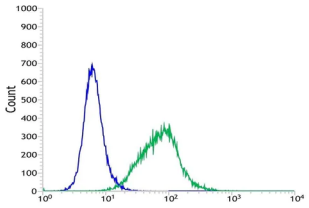
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

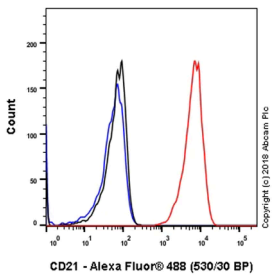
## 6 product images



## Flow Cytometry (Intracellular) - Anti-CD21 antibody [SP199] (ab227668)

CD21 Flow Cytometry (Intracellular) staining using rabbit Anti-CD21 antibody

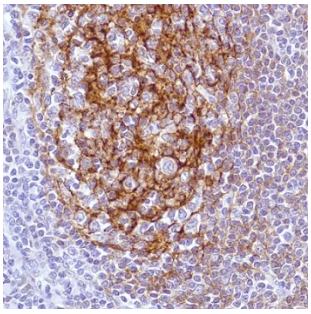
Flow cytometric analysis of Raji (human Burkitt's lymphoma cell line) cell line labeling CD21 with ab227668 at 1/100 (green) compared with a rabbit isotype control (blue).




## Flow Cytometry (Intracellular) - Anti-CD21 antibody [SP199] (ab227668)

CD21 Flow Cytometry (Intracellular) staining using rabbit Anti-CD21 antibody

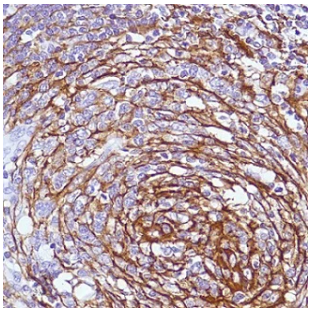
Flow cytometry analysis of Raji (Human Burkitt's lymphoma B lymphocyte) labeling CD21 with purified ab227668 at 1/20 dilution (5.1 µg/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as a secondary antibody. Isotype control - Rabbit monoclonal IgG (ab172730) (black). Unlableled control - Unlabelled cells (blue).



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD21 antibody [SP199] (ab227668)

CD21 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD21 antibody

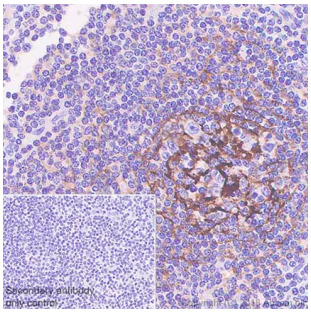
Formalin-fixed, paraffin-embedded human tonsil tissue stained for CD21 with ab227668 at 1/100 dilution in immunohistochemical analysis.



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD21 antibody [SP199] (ab227668)

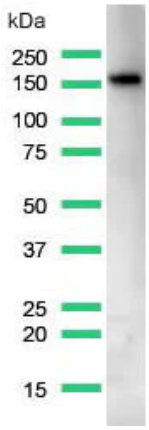
CD21 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD21 antibody

Formalin-fixed, paraffin-embedded human reactive lymph node tissue stained for CD21 with ab227668 at 1/100 dilution in immunohistochemical analysis.



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD21 antibody [SP199] (ab227668)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human tonsil tissue sections labeling CD21 with ab227668 at 1/100 dilution (1.02 µg/ml). Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 10mins. Goat Anti-Rabbit & Mouse IgG (HRP) was used as the secondary antibody. Hematoxylin was used as a counterstain. Positive staining on the human tonsil, performed on a Leica Biosystems BOND™ RX instrument. The section was incubated with ab227668 for 10 mins at room temperature.




# Western blot - Anti-CD21 antibody [SP199] (ab227668)

All lanes:
Western blot - Anti-CD21 antibody [SP199] (ab227668) at 1/150 dilution

All lanes:
Daudi (human Burkitt's lymphoma cell line) cell lysate

Developed using the ECL technique.

Predicted band size: 113 kDa

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