

# Anti-CD20/MS4A1 Antibody Picoband™ (monoclonal, 4I11)

Catalog # ABO15111

## Product Information

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|--------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Application</b>       | WB, IF                                                                                                                  |
| <b>Primary Accession</b> | <a href="#">P11836</a>                                                                                                  |
| <b>Host</b>              | Mouse                                                                                                                   |
| <b>Isotype</b>           | Mouse IgG2a                                                                                                             |
| <b>Reactivity</b>        | Human                                                                                                                   |
| <b>Clonality</b>         | Monoclonal                                                                                                              |
| <b>Format</b>            | Lyophilized                                                                                                             |
| <b>Description</b>       | Anti-CD20/MS4A1 Antibody Picoband™ (monoclonal, 4I11) . Tested in IF, WB applications. This antibody reacts with Human. |
| <b>Reconstitution</b>    | Adding 0.2 ml of distilled water will yield a concentration of 500 µg/ml.                                               |

## Additional Information

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| <b>Gene ID</b>             | 931                                                                                                                                                                                               |
| <b>Other Names</b>         | B-lymphocyte antigen CD20, B-lymphocyte surface antigen B1, Bp35, Leukocyte surface antigen Leu-16, Membrane-spanning 4-domains subfamily A member 1, CD20, MS4A1, CD20                           |
| <b>Calculated MW</b>       | 33077                                                                                                                                                                                             |
| <b>Application Details</b> | Western blot, 0.25-0.5 µg/ml, Human<br>Immunofluorescence, 5 µg/ml, Human                                                                                                                         |
| <b>Source</b>              | Eukaryota                                                                                                                                                                                         |
| <b>Contents</b>            | Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na <sub>2</sub> HPO <sub>4</sub> .                                                                                                      |
| <b>Clone Names</b>         | Clone: 4I11                                                                                                                                                                                       |
| <b>Immunogen</b>           | E.coli-derived human CD20/MS4A1 recombinant protein (Position: M1-P297).                                                                                                                          |
| <b>Purification</b>        | Immunogen affinity purified.                                                                                                                                                                      |
| <b>Storage</b>             | At -20°C for one year from date of receipt. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for six months. Avoid repeated freezing and thawing. |

## Protein Information

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| <b>Name</b>              | MS4A1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Synonyms</b>          | CD20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Function</b>          | B-lymphocyte-specific membrane protein that plays a role in the regulation of cellular calcium influx necessary for the development, differentiation, and activation of B-lymphocytes (PubMed: <a href="#">12920111</a> , PubMed: <a href="#">3925015</a> , PubMed: <a href="#">7684739</a> ). Functions as a store-operated calcium (SOC) channel component promoting calcium influx after activation by the B-cell receptor/BCR (PubMed: <a href="#">12920111</a> , PubMed: <a href="#">18474602</a> , PubMed: <a href="#">7684739</a> ). |
| <b>Cellular Location</b> | Cell membrane; Multi-pass membrane protein. Cell membrane; Lipid-anchor. Note=Constitutively associated with membrane rafts.                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Tissue Location</b>   | Expressed on B-cells.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## Background

CD20, also known as MS4A1, is an activated-glycosylated phosphoprotein expressed on the surface of all B-cells beginning at the pro-B phase (CD45R+, CD117+) and progressively increasing in concentration until maturity. It is mapped to 11q12.2. This gene encodes a member of the membrane-spanning 4A gene family. The function of CD20 is to enable optimal B-cell immune response, specifically against T-independent antigens. It is suspected that CD20 acts as a calcium channel in the cell membrane. What's more, this protein may be involved in the regulation of B-cell activation and proliferation.

## Images

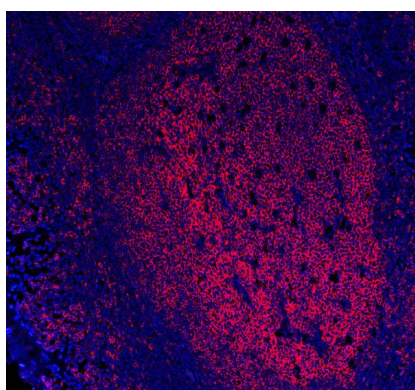


Figure 1. IF analysis of CD20/MS4A1 using anti-CD20/MS4A1 antibody (M03780-4). CD20/MS4A1 was detected in a paraffin-embedded section of human tonsil tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 5 µg/mL rabbit anti-CD20/MS4A1 Antibody (M03780-4) overnight at 4°C. Biotin conjugated goat anti-mouse IgG (BA1001) was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using DyLight®550 Conjugated Avidin (BA1134). The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

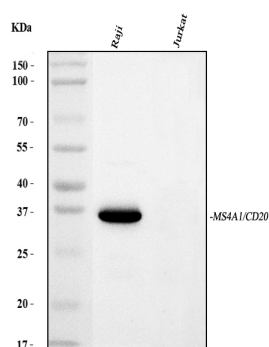


Figure 2. Western blot analysis of CD20/MS4A1 using anti-CD20/MS4A1 antibody (M03780-4). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 µg of sample under reducing conditions. Lane 1: human Raji whole cell lysates, Lane 2: human Jurkat 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 mouse anti-CD20/MS4A1 antigen affinity purified monoclonal antibody (Catalog # M03780-4) at 0.5 µg/mL overnight at

4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for CD20/MS4A1 at approximately 37 kDa. The expected band size for CD20/MS4A1 is at 33 kDa.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.