Human CD19 Antibody

Monoclonal Mouse IgG_{2B} Clone # 1062909

Catalog Number: MAB11717

DESCRIPTION

Species Reactivity	Human
Specificity	Detects recombinant human CD19 protein in Direct ELISA.
Source	Monoclonal Mouse IgG_{2B} Clone # 1062909
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese Hamster Ovary cell line, CHO-derived human CD19 Met1-Lys291 Accession # P15391
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.

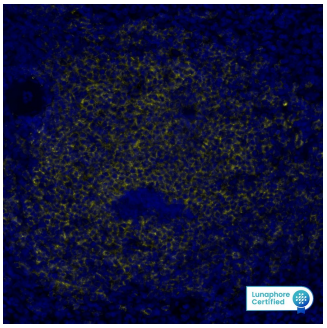
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	2 µg/mL	Raji human Burkitt's lymphoma cell line and NC-37 human Burkitt's lymphoma B lymphoblast cell line
Immunocytochemistry	3-25 µg/mL	Immersion fixed Daudi human Burkitt's lymphoma cell line
Multiplex Immunofluorescence	5 µg/mL	Immersion fixed paraffin-embedded sections of human spleen
Immunohistochemistry	3-25 µg/mL	Immersion fixed paraffin-embedded sections of human B-cell lymphoma, spleen, and tonsil

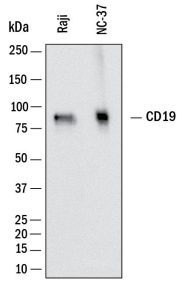
DATA

Multiplex Immunofluorescence



Detection of CD19 in Human spleen via seqIF™ staining on COMET™ CD19 was detected in immersion fixed paraffin-embedded sections of human spleen using Mouse Anti-Human CD19, Monoclonal Antibody (Catalog #MAB11717) at 5ug/mL at 37 ° Celsius for 4 minutes. Before incubation with the primary antibody, tissue underwent an all-in-one dewaxing and antigen retrieval preprocessing using PreTreatment Module (PT Module) and Dewax and HIER Buffer H (pH 9; Epredia Catalog # TA-999-DHBH).Tissue was stained using the Alexa Fluor™ 647 Goat anti-Mouse IgG Secondary Antibody at 1:200 at 37 ° Celsius for 2 minutes. (Yellow; Lunaphore Catalog # DR647MS) and counterstained with DAPI (blue; Lunaphore Catalog # DR100). Specific staining was localized to the membrane. Protocol available in COMET™ Panel Builder.

Western Blot



Detection of Human CD19 by Western Blot. Western Blot shows lysates of Raji human Burkitt's lymphoma cell line and NC-37 human Burkitt's lymphoma B lymphoblast cell line. PVDF membrane was probed with 2 µg/ml of Mouse Anti-Human CD19 Monoclonal Antibody (Catalog # MAB11717) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for CD19 at approximately 95 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

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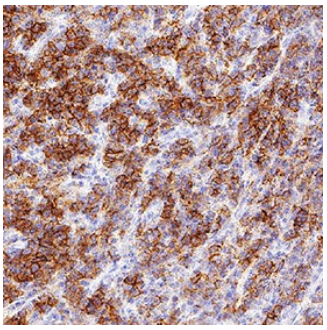
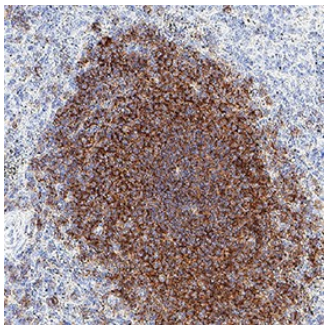
Immunohistochemistry



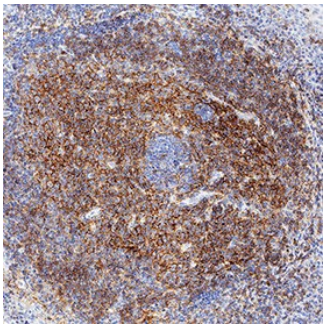
Detection of CD19 in Human B-cell Lymphoma. CD19 was detected in immersion fixed paraffin-embedded sections of human b-cell lymphoma using Mouse Anti-Human CD19 Monoclonal Antibody (Catalog # MAB11717) at 5 µg/ml for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001) or the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to the membrane. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

Immunohistochemistry



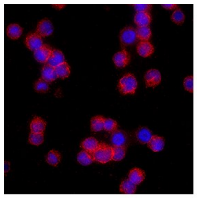
Detection of CD19 in Human Spleen. CD19 was detected in immersion fixed paraffin-embedded sections of human spleen using Mouse Anti-Human CD19 Monoclonal Antibody (Catalog # MAB11717) at 5 µg/ml for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001) or the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to the membrane in the white pulp of spleen. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

Immunohistochemistry

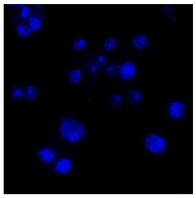


Detection of CD19 in Human Tonsil. CD19 was detected in immersion fixed paraffin-embedded sections of human tonsil using Mouse Anti-Human CD19 Monoclonal Antibody (Catalog # MAB11717) at 5 µg/ml for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001) or the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to the membrane . View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

Immunocytochemistry



Positive (Daudi cells)



Negative (U266 cells)

Detection of CD19 in Daudi cells. CD19 was detected in immersion fixed Daudi human Burkitt's lymphoma cell line (Positive) and absent in U266 human myeloma cell line (Negative) using Mouse Anti-Human CD19 Monoclonal Antibody (Catalog # MAB11717) at 8 µg/ml for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to the membrane of Daudi cells. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

CD19, also known as B4, is a transmembrane glycoprotein of the immunoglobulin superfamily that plays a central role in B cell activation and humoral immune responses (1, 2). CD19 consists of an extracellular domain (ECD) with two C2-type Ig-like domains, a transmembrane segment, and a cytoplasmic domain with nine tyrosine residues, 3 of which are critical for function (1, 2). Within the mature ECD, human CD19 shares 57% amino acid sequence identity with mouse and rat CD19. CD19 is expressed throughout B cell development from pre-B cells through mature B cells, and it is commonly used as a B cell lineage marker (1, 2). It is required for the responsiveness of mature B cell to antigen stimulation, germinal center development, and antibody affinity maturation (1, 2). CD19 associates with the B cell antigen receptor (BCR), CD81, CD38, CD21, CD22, and IFITM1/CD225/Leu-13 (1, 3). These associations enable CD19 to amplify B cell signaling and reduce the threshold for antigen stimulation through the BCR (1, 3). CD19 polymorphisms and up-regulation can lead to the development of autoimmunity by promoting autoantibody production (2). CD19 has emerged as promising therapeutic target for hematologic cancers and solid tumors, such as leukemias and lymphomas (4, 5). Immunotherapy using a chimeric antigen receptor (CAR) targeting CD19 has emerged as promising therapeutic target for hematologic cancers and solid tumors, such as leukemias and lymphomas (4, 5). The first CD19 CAR T cell therapies have been granted FDA approval for the treatment of B cell malignancies with several more in clinical trials (6).

References:

1. Wang, K. *et al.* (2012) Exp. Hematol. Oncol. **1**:36.
2. Del Nargo, C.J. *et al.* (2005) Immunol Res. **31**:229.
3. Yu, F. *et al.* (2010) J Neurooncol. **103**:187.
4. Kochenderfer, J. *et al.* (2015) J. Clin. Oncol. **33**:540.
5. Lee, D. *et al.* (2015) Lancet. **385**:517.
6. Ahmad, A. *et al.* (2020) Int. J. Mol. Sci. **21**:3906.

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