

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
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunocytochemistry	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

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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