Recombinant Human CD19 His-tag

Catalog Number: 11095-CD

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human CD19 protein

Human CD19 (Glu21-Lys291) Accession # P15391.6	6-His tag	IEGR

N-terminus C-terminus

N-terminal Sequence Analysis	Glu21
Predicted Molecular Mass	31 kDa

SPECIFICATIONS

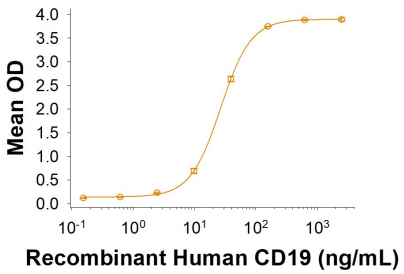
SDS-PAGE	50-65 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. When Human CD19 Antibody (FMC63) (Novus Biologicals, Catalog # NBP2-52716) is immobilized at 2.00 µg/mL (100 µL/well), Recombinant Human CD19 binds with an ED_{50} of 15.0-150 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it 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. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

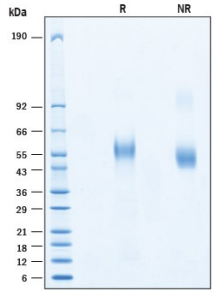
DATA

Binding Activity



Recombinant Human CD19 His-tag Protein Binding Activity. When Human CD19 Antibody (FMC63) (Novus Biologicals, Catalog # NBP2-52716) is immobilized at 2.00 µg/mL (100 µL/well), Recombinant Human CD19 His-tag Protein (Catalog # 11095-CD) binds with an ED_{50} of 15.0-50 ng/mL.

SDS-PAGE



Recombinant Human CD19 His-tag Protein SDS-PAGE. 2 µg/lane of Recombinant Human CD19 His-tag Protein (Catalog # 11095-CD) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 50-65 kDa.

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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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