Recombinant Rat CD19 Fc Chimera

Catalog Number: 10525-CD

DESCRIPTION

Source

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

N-terminal Sequence Analysis	Arg19
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	57 kDa

SPECIFICATIONS

SDS-PAGE	80-95 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Rat CD19 Fc Chimera(Catalog # 10525-CD) is immobilized at 5 µg/mL,100 µL/well, recombinant biotinylated human CD81 Fc Chimera binds with an ED_{50} of 10-60 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, 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. 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.

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, rat CD19 shares 57% and 88% amino acid sequence identity with human and mouse CD19, respectively. 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+ target cells can be recognized and killed by T cells that express anti-CD19 chimeric antigen receptors (CARs) (4). This interaction has been shown to be beneficial in the treatment of various B-cell malignancies, such as leukemias and lymphomas (4, 5).

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.

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