

human CD19, GFP/His-Tag

B-lymphocyte antigen CD19

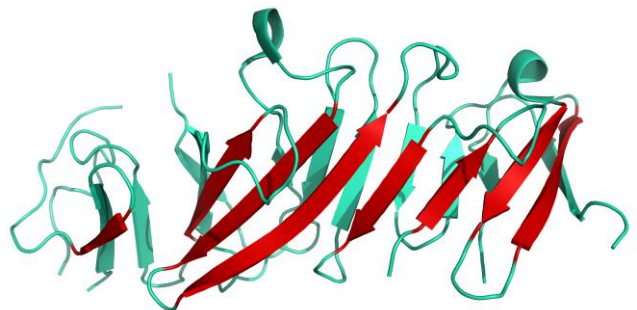
Cat. no. P2020-156

Product Information

Protein:	human CD19, GFP/His-Tag (~ 58.5 kDa)
Uniprot#:	P15391
Sequence:	<pre>MEEPLVVKVEEGDNAVLQCLKGTSDGPTQQLTWSRESPLKPFLLKSLGLPGLGIHMRPLAIWLFIFNV SQQMGGFYLCQPGPPSEKAWQPWTVNVEGSGELFRWNVSDLGGLGCGLKNRSSEGPSSPSGKL MSPKLYVWAKDRPEIWEGERPPCLPPRDSLNSQLSQDLTMAPGSTLWLSGCVPPDSVSRGPLSWTHV HPKGPKSLLSLELKDDRPARDMWVWVETGLLLPRATAQDAGKYYCHRGNTMSFHLEITARPVLWH WLLRTGGWK</pre>
	Methionine at pos. 1 might be present due to cloning constraints, C-terminal His-tag and GFP-fusion not shown in sequence.
Source:	Recombinantly expressed in HEK293.
Tag(s):	GFP/His-tag, C-terminal
Purification:	Purified by affinity chromatography and subsequent buffer exchange.
Formulation:	PBS; pH 7.4. Liquid, stored and shipped at -80 °C.
Purity:	> 75 % (will be determined by densitometry of Coomassie stained gel, example next page)
Concentration:	Will be determined by BCA-Assay.
Long-term storage:	No recommendations.
Comment:	Protein migrates at higher molecular weight during SDS-PAGE due to posttranslational modifications.

Background Information:

The B lymphocyte antigen CD19 is a cell surface glycoprotein expressed on B cells from early pre-B cell stages to mature B cells. Thus, CD19 is useable as reliable marker for B cell lineage. CD19 is a member of the immunoglobulin superfamily and consists of extracellular immunoglobulin-like domains, a transmembrane region, and a cytoplasmic tail. It collaborates with the B cell receptor (BCR) complex to transmit signals that are essential for B cell survival, proliferation, and differentiation. More precisely, CD19 enhances the binding of the complement component C3d to its receptor CD21 (complement receptor CR2), which is a component of the BCR complex. This leads to the formation of a multi-molecular complex that amplifies BCR signaling and is essential for an enhanced responsiveness of B cells to antigens. Consequently, CD19 is crucial for optimizing B cell activation and promoting effective immune responses.



Structural model of human CD19

human CD19, GFP/His-Tag

B-lymphocyte antigen CD19

Cat. no. P2020-156

Product Information

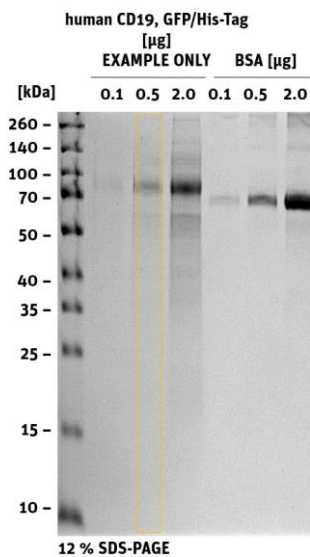
In addition, CD19 forms a complex with CD81, which is a tetraspanin protein associated with B cell membranes. This complex contributes to the organization and stabilization of B cell membrane microdomains and is also implicated in the regulation of B cell signaling.

Due to its sustained presence in B cell malignancies, CD19 represents an attractive target for immunotherapeutic interventions. Chimeric antigen receptor (CAR) T cell therapies directed against CD19 have demonstrated remarkable success in treating B cell lymphomas and leukemia. Despite these successes, challenges such as antigen escape variants and long-term

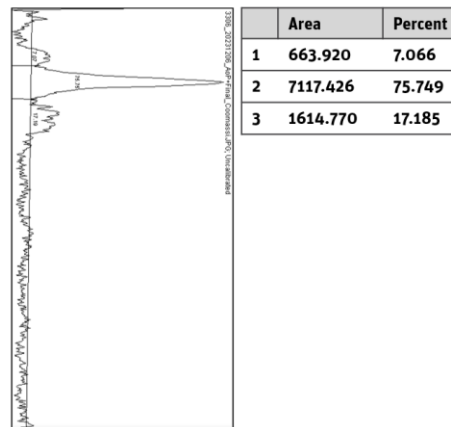
safety considerations are subjects of ongoing research to optimize the clinical application of CD19-directed therapies.

Mutations in CD19 lead to severe immunodeficiency syndromes characterized by decreased antibody production. Furthermore, dysregulation of CD19 expression or function is associated with the development and progression of autoimmune diseases, such as rheumatoid arthritis and multiple sclerosis. In autoimmune diseases, B cells may become hyperactive, producing autoantibodies that target self-antigens, contributing to tissue damage and inflammation.

Quality Information (provided for each lot):



SDS-PAGE/Coll.Coomassie



Histogram (of marked lane in gel picture)