

## BTLA Protein, Human, Recombinant (mFc)

### General Information

Synonyms:	BTLA1;CD272;B and T lymphocyte associated
Protein Construction:	A DNA sequence encoding the Human BTLA (NP_861445.4) (Mer1-Ser150) was expressed with the Fc region of mouse IgG2a at the C-terminus. Predicted N terminal: Lys 31
Species:	Human
Expression Host:	HEK293 Cells
Accession:	NP_861445.4
Molecular Weight:	40.56 kDa (predicted); 58.53 kDa (reducing conditions)

### QC Testing

Biological Activity:	1. Immobilized Recombinant Human HVEM / TNFRSF14 Protein (His Tag) at 2µg/mL (100µL/well) can bind Recombinant Human BTLA Protein (mFc Tag) , the EC50 is 1.0-3.0 ng/mL. 2.Loaded Recombinant Human HVEM Protein, hFc Tag on AR2G Biosensor, can bind Human BTLA protein, mFc Tag with an affinity constant of 3.18nM as determined in BLI assay (Routinely tested).
Purity:	≥ 95 % as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

**Reconstitution:**  
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

#### Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

BTLA is an inhibitory molecule which belongs to the Ig superfamily. It down-modulates immune responses. As such, reagents that regulate the binding of BTLA to its ligand or alter BTLA signaling have significant therapeutic promise. BTLA is crucial to understand the mechanism(s) of action of these antibodies before attempting clinical applications. BTLA is not expressed by naive T cells, but it is induced during activation and remains expressed on T helper type 1 (T(H)1) but not T(H)2 cells. BTLA is a third inhibitory receptor on T lymphocytes with similarities to cytotoxic T lymphocyte-associated antigen 4 (CTLA-4) and programmed death 1 (PD-1). Cancer Immunotherapy Co-inhibitory Immune Checkpoint Targets Immune Checkpoint Targets Immunotherapy Targeted Therapy

### Reference

Fourcade J, et al. (2012) CD8(+) T cells specific for tumor antigens can be rendered dysfunctional by the tumor microenvironment through upregulation of the inhibitory receptors BTLA and PD-1. *Cancer Res.* 72(4):887-96.

Kojima R, et al. (2011) Molecular basis for herpesvirus entry mediator recognition by the human immune inhibitory receptor CD160 and its relationship to the cosignaling molecules BTLA and LIGHT. *J Mol Biol.* 413(4):762-72.

Oki M, et al. (2011) A functional polymorphism in B and T lymphocyte attenuator is associated with susceptibility to rheumatoid arthritis. *Clin Dev Immunol.* 305656.

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