

## LIGHT/TNFSF14 Protein, Human, Recombinant (Avi & Fc), Biotinylated

### General Information

Synonyms:	CD258;LTg;tumor necrosis factor (ligand) superfamily, member 14;HVEM;TR2;LIGHT
Protein Construction:	A DNA sequence encoding the human TNFSF14 (NP_001363816.1) (Asp74-Val240) was expressed with a N-terminal AVI tag followed by a Fc region of human IgG1 tag. The expressed protein was biotinylated in vivo by the Biotin-Protein ligase (BirA enzyme) which is co-expressed. Predicted N terminal: Gly
Species:	Human
Expression Host:	HEK293 Cells
Accession:	O43557-1
Molecular Weight:	46.7 kDa (predicted)

### QC Testing

Biological Activity:	Immobilized Human HVEM His at 2 µg/mL (100 µL/well) can bind Human LIGHT (ECD, hFc & AVI Tag), Biotinylated, the EC50 is 20-180 ng/mL.
Purity:	> 90 % 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. <small>Actual storage temperature shall be subject to the COA.</small>
Shipping:	In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

LIGHT, also known as TNFSF14 or CD258, is a newly identified member of the TNF superfamily (TNFSF14) that is expressed by activated T lymphocytes, monocytes, granulocytes, spleen cells, and immature dendritic cells. TNFSF14 / LIGHT / CD258 is a type II transmembrane protein that is known to bind 2 membrane-bound TNFSF

signaling receptors: HVEM, which is predominantly expressed by T cells, and lymphotoxin  $\beta$  receptor (LT $\beta$ R), which is expressed by stromal cells and nonlymphoid hematopoietic cells. TNFSF14 / LIGHT / CD258 also binds to a soluble non-signaling receptor, decoy receptor 3 (DcR3), which can modulate the function of LIGHT in vivo. TNFSF14 / LIGHT / CD258 can also costimulate T cell responses via HVEM, which is constitutively expressed in most lymphocyte subpopulations, including CD4<sup>+</sup> and CD8<sup>+</sup>T cells. In addition, TNFSF14 / LIGHT / CD258 has been shown to suppress tumor formation in vivo and to induce tumor cell apoptosis via the up-regulation of intercellular adhesion molecule 1 and an increased lymphocyte adhesion to cancer cells. Thus, TNFSF14 / LIGHT / CD258 is being actively investigated as a possible basis for cancer treatment. Cancer Immunotherapy Co-stimulatory Immune Checkpoint Targets Immune Checkpoint Immune Checkpoint Proteins Immune Checkpoint Targets Immunotherapy Targeted Therapy

### Reference

- Ogawa T, et al. (2010) CXCR3 binding chemokine and TNFSF14 over expression in bladder urothelium of patients with ulcerative interstitial cystitis. *J Urol.* 183(3): 1206-12.
- Kanodia S, et al. (2010) Expression of LIGHT/TNFSF14 combined with vaccination against human papillomavirus Type 16 E7 induces significant tumor regression. *Cancer Res.* 70(10): 3955-64.
- Hosokawa Y, et al. (2010) TNFSF14 coordinately enhances CXCL10 and CXCL11 productions from IFN-gamma-stimulated human gingival fibroblasts. *Mol Immunol.* 47(4): 666-70.

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