

HVEM/TNFRSF14 Protein, Human (Sf9, Fc)

Cat. No.:	HY-P7366
Synonyms:	rHuHVEM, Fc Chimera; TNFRSF14; TR2; CD270; HVEA
Species:	Human
Source:	Sf9 insect cells
Accession:	Q92956 (L39-K184)
Gene ID:	8764
Molecular Weight:	Approximately 45 kDa

PROPERTIES

AA Sequence	<pre> L P S C K E D E Y P V G S E C C P K C S P G Y R V K E A C G E L T G T V C E P C P P G T Y I A H L N G L S K C L Q C Q M C D P A M G L R A S R N C S R T E N A V C G C S P G H F C I V Q D G D H C A A C R A Y A T S S P G Q R V Q K G G T E S Q D T L C Q N C P P G T F S P N G T L E E C Q H Q T K R S C D K T H T C P P C P A P E L L G G P S V F L F P P K P K D T L M I S R T P E V T C V V V D V S H E D P E V K F N W Y V D G V E V H N A K T K P R E E Q Y N S T Y R V V S V L T V L H Q D W L N G K E Y K C K V S N K A L P A P I E K T I S K A K G Q P R E P Q V Y T L P P S R D E L T K N Q V S L T C L V K G F Y P S D I A V E W E S N G Q P E N N Y K T T P P V L D S D G S F F L Y S K L T V D K S R W Q Q G N V F S C S V M H E A L H N H Y T Q K S L S L S P G K </pre>
Biological Activity	<ol style="list-style-type: none"> The ED₅₀ < 0.1 µg/ml, measured by the neutralization assay using 929 cells in presence of 0.25 ng/mL of human TNF-beta, corresponding to a specific activity of > 1.0 × 10⁴ units/mg. Immobilized HVEM, hFc, Human at 2.0 µg/mL (100 µl/well) can bind biotinylated human BTLA with a linear range of 0.39-3.13 µg/mL. Immobilized HVEM, hFc, Human at 2.0 µg/mL (100 µl/well) can bind biotinylated CD160, hFc, Human with a linear range of 0.39-3.13 µg/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized after extensive dialysis against PBS.
Endotoxin Level	<0.2 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

HVEM is widely expressed in a range of hematopoietic cells, including B cells, T cells, NK cells, monocytes and immature dendritic cells, and several non-hematopoietic cells and tissues, including the liver, kidney and lung^[1].

The amino acid sequence of human HVEM protein has low homology for mouse HVEM protein.

HVEM is known as the “molecular switch” models of activation and inhibition. HVEM provides an inhibitory or activating signal and bi-directionally regulates host immune function. HVEM binds to LIGHT or LIGHT- α exerts a positive stimulatory effect, stimulating lymphocyte proliferation, activation, and inducing inflammatory reactions; thus, providing a second stimulatory signal for T cell activation. Besides, the Binding of HVEM to BTLA and CD160 exerts an adverse regulatory effect, promoting signal transduction through the ERK1/2 and PI3K (phosphatidylinositol 3-kinase)-AKT (protein kinase B (PKB)) pathways, leading to the production of IFN γ , inhibiting T- and B-lymphocyte activation and proliferation and binding of HVEM to HSV-gD, which can promote HSV infection in target cells^{[2][3]}.

HVEM is considered to be a molecular switch for immune responses, HVEM induces DCs to produce IL-10 and shows protection against experimental autoimmune myocarditis (EAM) caused by myosin^[4].

REFERENCES

- [1]. Ma B, et al. High expression of HVEM is associated with improved prognosis in intrahepatic cholangiocarcinoma. *Oncol Lett.* 2021 Jan;21(1):69.
- [2]. Yu X, et al. BTLA/HVEM Signaling: Milestones in Research and Role in Chronic Hepatitis B Virus Infection. *Front Immunol.* 2019 Mar 29;10:617.
- [3]. Rodriguez-Barbosa JI, et al. HVEM, a cosignaling molecular switch, and its interactions with BTLA, CD160 and LIGHT. *Cell Mol Immunol.* 2019 Jul;16(7):679-682.
- [4]. Cai G, et al. Amelioration of myocarditis by HVEM-overexpressing dendritic cells through induction of IL-10-producing cells. *Cardiovasc Res.* 2009 Dec 1;84(3):425-33.
- [5]. Montgomery RI, et al. Herpes simplex virus-1 entry into cells mediated by a novel member of the TNF/NGF receptor family. *Cell.* 1996 Nov 1;87(3):427-36.

Caution: Product has not been fully validated for medical applications. For research use only.

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