

## Recombinant Human NKG2DL/ULBP-1 Protein (His Tag)

Catalog No. PKSH032814

**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

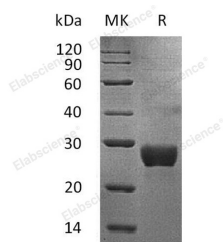
### Description

<b>Synonyms</b>	NKG2D ligand 1;N2DL-1;NKG2DL1;ALCAN-beta;Retinoic acid early transcript 1I;UL16-binding protein 1;ULBP1
<b>Species</b>	Human
<b>Expression Host</b>	HEK293 Cells
<b>Sequence</b>	Gly26-Pro215
<b>Accession</b>	Q9BZM6
<b>Calculated Molecular Weight</b>	23.3 kDa
<b>Observed molecular weight</b>	25-30 kDa
<b>Tag</b>	C-His
<b>Bioactivity</b>	Not validated for activity

### Properties

<b>Purity</b>	> 95 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 1.0 EU per µg of the protein as determined by the LAL method.
<b>Storage</b>	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
<b>Reconstitution</b>	Please refer to the printed manual for detailed information.

### Data



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### Background

ULBP1; also known as RAET1I and NKG2DL1; is a member of the ULBP/RAET1 gene family. ULBP1 plays an

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important role in immune responses; especially in cancer and infectious diseases; and is well-known to bind to NKG2D together with at least ULBP 2 and 3. These proteins are distantly related to major histocompatibility class I (MHC I) molecules; possessing the alpha 1 and alpha 2 Ig-like domains; but lacking the alpha 3 domain. Unlike MHC Class I; they have no capacity to bind peptide or interact with beta2-microglobulin. It can activate multiple signaling pathways in primary NK cells; gamma delta T cells; and CD8+ alpha beta T cells; resulting in the production of cytokines and chemokines. ULBP1 is expressed in wide range of tissues including heart; brain; lung; liver; bone marrow and some tumor cells; T-cells; B-cells; As an unconventional member of the MHC class I family; ULBP1 is able to interact with soluble CMV glycoprotein UL16 in CMV infected cells. The interaction with UL16 blocked the interaction with the NKG2D receptor; and thus might escape the immune surveillance. Furthermore; UL16 also causes ULBP1 to be retained in the ER and cis-Golgi apparatus so that it does not reach the cell surface. The ULBP1 regulation may have implications for development of new therapeutic strategies against cancer cells.