

## CLEC4A Protein, Human, Recombinant (His)

### General Information

|                       |   |
|-----------------------|---|
| Synonyms:             | CLECSF6;LLIR;CD367;C-type lectin domain family 4 member A;CLEC4A;HDCGC13P;DCIR;DDB27  |
| Protein Construction: | A DNA sequence encoding the human CLEC4A (NP_057268.1) extracellular domain (Gln 70-Leu 237) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: His |
| Species:              | Human   |
| Expression Host:      | HEK293 Cells  |
| Accession:            | Q9UMR7-1  |
| Molecular Weight:     | 22 kDa (predicted); 28 kDa (reducing condition, due to glycosylation)   |

### QC Testing

|                      |  |
|----------------------|--|
| Biological Activity: | Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.   |
| Purity:              | > 95 % as determined by SDS-PAGE. > 95 % as determined by SEC-HPLC.  |
| 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

Dendritic cell immunoreceptor (DCIR), also known as C-type lectin domain family 4 member A (CLEC4A), C-type lectin superfamily member 6 (CLECSF6), is a single-pass type II C-type lectin receptor expressed mainly in dendritic cells (DCs), which is a negative regulator of DC expansion and has a crucial role in maintaining the homeostasis of the immune system. The Dectin-2 family of C-type lectins that includes Dectin-2, BDCA-2, DCIR, DCAR, Clecsf8 and

Mincle. These type II receptors contain a single extracellular carbohydrate recognition domain and have diverse functions in both immunity and homeostasis. DCIR is the only member of the family which contains a cytoplasmic signalling motif and has been shown to act as an inhibitory receptor, while BDCA-2, Dectin-2, DCAR and Mincle all associate with FcRgamma chain to induce cellular activation, including phagocytosis and cytokine production. Dectin-2 and Mincle have been shown to act as pattern recognition receptors for fungi, while DCIR acts as an attachment factor for HIV. In addition to pathogen recognition, DCIR has been shown to be pivotal in preventing autoimmune disease by controlling dendritic cell proliferation. DCIR expressed on antigen presenting cells and granulocytes and acts as an inhibitory receptor via an intracellular immunoreceptor tyrosine-based inhibitory motif (ITIM). It may also be involved via its ITIM motif in the inhibition of B-cell-receptor-mediated calcium mobilization and protein tyrosine phosphorylation. Additionally, DCIR can participate in the capture of HIV-1 and promote infection in trans and in cis of autologous CD4(+) T cells from human immature monocyte-derived DCs. DCIR acts as a ligand for HIV-1 and is involved in events leading to productive virus infection.

### Reference

- Kanazawa N, et al. (2004) Signaling and immune regulatory role of the dendritic cell immunoreceptor (DCIR) family lectins: DCIR, DCAR, dectin-2 and BDCA-2. *Immunobiology*. 209(1-2): 179-90.
- Fujikado N, et al. (2008) Dcir deficiency causes development of autoimmune diseases in mice due to excess expansion of dendritic cells. *Nat Med*. 14(2): 176-80.
- Lambert AA, et al. (2008) The C-type lectin surface receptor DCIR acts as a new attachment factor for HIV-1 in dendritic cells and contributes to trans- and cis-infection pathways. *Blood*. 112(4): 1299-307.
- Graham LM, et al. (2009) The Dectin-2 family of C-type lectins in immunity and homeostasis. *Cytokine*. 48(1-2): 148-55.

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