

## CD34 Protein, Human, Recombinant (His)

### General Information

Synonyms:	CD34 molecule
Protein Construction:	A DNA sequence encoding the extracellular domain of human CD34 precursor (NP_001020280.1) (Met 1-Thr 290) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Ser 32
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P28906-1
Molecular Weight:	29 kDa (predicted); 72.33kDa (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. ≥ 90 % 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

Cluster of Differentiation 34 (CD34) is a member of a family of single-pass transmembrane sialomucin proteins, and may function as a cell-cell adhesion factor. CD34 protein is selectively expressed on hematopoietic progenitor cells and the small vessel endothelium of a variety of tissues. It has been widely used as a stem and progenitor cell marker, and clinical CD34+ stem cell transplantation (CD34+SCT) has been performed for tumor purging. CD34

monoclonal antibodies are widely used to identify and isolate hemopoietic progenitors and to classify acute and chronic leukemias.

### Reference

Hogan CJ, et al. (2002) Differential long-term and multilineage engraftment potential from subfractions of human CD34+ cord blood cells transplanted into NOD/SCID mice. Proc Nat Acad Sci USA. 99 (1): 413-8.

Nielsen JS, et al. (2009) CD34 is a key regulator of hematopoietic stem cell trafficking to bone marrow and mast cell progenitor trafficking in the periphery. Microcirculation. 16(6): 487-96.

Mastrandrea F, et al. (2009) CD34+ hemopoietic precursor and stem cells traffic in peripheral blood of celiac patients is significantly increased but not directly related to epithelial damage severity. Eur Ann Allergy Clin Immunol. 40(3): 90-103.

Pasquet S, et al. (2009) Long-term benefit of intracardiac delivery of autologous granulocyte-colony-stimulating factor-mobilized blood CD34+ cells containing cardiac progenitors on regional heart structure and function after myocardial infarct. Cytotherapy. 11(8): 1002-15.

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