

CD14 Protein, Human, Recombinant (His)

General Information

Synonyms:	CD14 antigen; monocyte differentiation antigen CD14; CD14 molecule
Protein Construction:	A DNA sequence encoding the mature form of human CD14 (NP_000582.1) (Met 1-Met 344) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Thr 20
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P08571
Molecular Weight:	36.5 kDa (predicted); 45 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its ability to enhance LPS -stimulated IL-8 secretion by THP-1 human acute monocytic leukemia cells. The ED50 for this effect is typically 25-95 ng/mL.
Purity:	≥ 97 % as determined by SDS-PAGE. ≥ 85 % 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:	Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.
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

The cluster of differentiation (CD) system is commonly used as cell markers in immunophenotyping. Different kinds of cells in the immune system can be identified through the surface CD molecules associating with the immune function of the cell. There are more than 320 CD unique clusters and subclusters have been identified. Some of the CD molecules serve as receptors or ligands important to the cell through initiating a signal cascade which then alter the behavior of the cell. Some CD proteins do not take part in cell signal process but have other functions

such as cell adhesion. Cluster of differentiation 14 (CD14) is a member of the CD system. It takes its name from its inclusion in the CD molecule surface marker proteins. CD14 exists in two forms: a form anchored into the membrane or a soluble form. CD14 was found expressed in macrophages, neutrophil granulocyte and dendritic cells. The major function is to serve as a co-receptor (along with TLR4 and MD-2) for the bacterial lipopolysaccharide (LPS) and other pathogen-associated molecular patterns.

Reference

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- Matesanz-Isabel J, et al. (2011) New B-cell CD molecules. Immunology Letters. 134 (2): 104-12.
- SD Wright, et al. (1990) CD14, a receptor for complexes of lipopolysaccharide (LPS) and LPS binding protein. Science. 249 (4975): 1431-3.

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