

CD45 Protein, Human, Recombinant (His & Avi), Biotinylated

General Information

Synonyms:	LCA;LY5;EC 3.1.3.48;CD45;L-CA;T200;CD45R;PTPRC;B220;GP180
Protein Construction:	Gln26--Lys416
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P08575-4
Molecular Weight:	47.3 kDa (predicted). Due to glycosylation, the protein migrates to 80-110 kDa based on Tris-Bis PAGE result.

QC Testing

Biological Activity:	Immobilized Anti-CD45 Antibody at 2µg/ml (100µl/well) on the plate. Dose response curve for Biotinylated Human CD45, His Tag with the EC50 of 0.16µg/ml determined by ELISA.
Purity:	> 95% as determined by Tris-Bis PAGE; > 95% as determined by 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, 8% trehalose is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 µg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

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

PTPRC (also known as CD45), T cells require the protein tyrosine phosphatase CD45 to detect and respond to antigen because it activates the Src family kinase Lck, which phosphorylates the T cell antigen receptor (TCR) complex. CD45 activates Lck by opposing the negative regulatory kinase Csk. Paradoxically, CD45 has also been implicated in suppressing TCR signaling by dephosphorylating the same signaling motifs within the TCR complex upon which Lck acts.

Reference

Courtney AH, et al. CD45 functions as a signaling gatekeeper in T cells. Sci Signal. 2019 Oct 22;12(604): eaaw815doi: 10.1126/scisignal.aaw815PMID: 31641081; PMCID: PMC6948007.

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