

## CD45 Protein, Human, Recombinant (aa 1-529, His)

### General Information

|                       |   |
|-----------------------|---|
| Synonyms:             | GP180;B220;L-CA;protein tyrosine phosphatase, receptor type, C;LCA;CD45;CD45R;T200;LY5  |
| Protein Construction: | A DNA sequence encoding the human PTPRC (XP_006711535.1) (Met1-Lys529) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Gln 26 |
| Species:              | Human   |
| Expression Host:      | HEK293 Cells  |
| Accession:            | P08575-5  |
| Molecular Weight:     | 57.4 kDa (predicted)  |

### 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.  |
| 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.

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

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. Protein tyrosine phosphatase, receptor type C (CD45), also known as PTPRC is a member of the protein tyrosine phosphatase (PTP) family which is known for its function to serve as signaling molecules and to regulate a variety of cellular processes such as cell proliferation, differentiation, mitotic cycle and oncogenic transformation. CD45 is found expression specifically in hemotopietic cells. CD45 consists of an extracellular domain, a single transmembrane segment and two tandem intracytoplasmic catalytic domains. It serves as an essential regulator of T-cell and B-cell antigen receptor signaling through either direct interaction with components of the antigen receptor complexes or by activating various Src family kinases required for the antigen receptor signaling and it also can suppress JAK kinases.

### Reference

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Matesanz-Isabel J,et al.(2011) New B-cell CD molecules. Immunology Letters.134 (2): 104-12.  
Irie-Sasaki J,et al.(2001) CD45 is a JAK phosphatase and negatively regulates cytokine receptor signaling. Nature. 409: 349-54.

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