

## PFDN1 Protein, Mouse (His)

Cat. No.:	HY-P76541
Synonyms:	Prefoldin subunit 1; PFDN1; PFD1
Species:	Mouse
Source:	E. coli
Accession:	Q9CQF7 (M1-Q122)
Gene ID:	67199
Molecular Weight:	Approximately 16 kDa

### PROPERTIES

AA Sequence	<p>           M A A S V D L E L K    K A F T E L Q A K V    I D T Q Q K V K L A    D I Q I E Q L N R T            K K H A H L T D T E    I M T L V D E T N M    Y E G V G R M F I L    Q S K E V I H N Q L            L E K Q K I A E E K    I K E L E Q K K S Y    L E R S V K E A E D    N I R E M L M A R R            A Q         </p>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

Background	<p>           HLA-DPB1, a pivotal player in the immune response, is instrumental in presenting peptides derived from antigens to CD4 T-cells. Operating within the endocytic route of antigen-presenting cells (APCs), HLA-DPB1's peptide binding cleft accommodates a range of 10-30 residue peptides. This MHC class II molecule is particularly involved in the exogenous antigen presentation pathway, where peptides from degraded proteins are presented on the cell surface. The complex process involves the association of three MHC class II molecules with a CD74 trimer in the endoplasmic reticulum (ER), forming a heterononamer. Upon entry into the endosomal/lysosomal system, CD74 undergoes sequential degradation, culminating in the release of a small fragment known as CLIP (class-II-associated invariant chain peptide). The removal of CLIP is facilitated by HLA-DM, which stabilizes MHC class II molecules until high-affinity antigenic peptides are bound. The         </p>
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resultant MHC II molecule-peptide complex is then transported to the cell membrane surface for recognition. Notably, HLA-DO in B-cells and primary dendritic cells (DCs) regulate the interaction between HLA-DM and MHC class II molecules. The lysosomal microenvironment, characterized by increased acidification, plays a crucial role in regulating antigen loading into MHC II molecules, impacting proteolysis and efficient peptide loading. The heterodimeric structure of HLA-DPB1, composed of an alpha and a beta subunit, contributes to its multifaceted role in antigen presentation.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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