Data Sheet (Cat.No.TMPY-02885)

TargetMol

CD1B Protein, Human, Recombinant (hFc)

General Information

Synonyms:	CD1;CD1A;CD1b molecule;R1;CD1B
Protein Construction:	A DNA sequence encoding the human CD1B (NP_001755) (Met1-Ser 303) was expressed, fused with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Ser 18
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P29016-1
Molecular Weight:	58.6 kDa (predicted); 59-69 kDa (reducing conditions)

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:	> 88 % 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:

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

CD1B contains 1 Ig-like (immunoglobulin-like) domain and belongs to the CD1 family. CD1 family members are transmembrane glycoproteins, which are structurally related to the major histocompatibility complex (MHC) proteins and form heterodimers with beta-2-microglobulin. During protein synthesis and maturation, they bind endogenous lipids that are replaced by lipid or glycolipid antigens when the proteins are internalized and pass through endosomes, before trafficking back to the cell surface. CD1B localizes to late endosomes and lysosomes

via a tyrosine-based motif in the cytoplasmic tail, and requires vesicular acidification to bind lipid antigens.. It is expressed on cortical thymocytes, epidermal Langerhans cells, dendritic cells, on certain T-cell leukemias, and in various other tissues. CD1B is an antigen-presenting protein that binds self and non-self lipid and glycolipid antigens and presents them to T-cell receptors on natural killer T-cells.

Reference

Coventry B, et al. (2004) CD1a in human cancers: a new role for an old molecule. Trends Immunol. 25 (5):242-8.
Martin LH, et al. (1988) Structure and expression of the human thymocyte antigens CD1a, CD1b, and CD1c. Proc Natl Acad Sci. 84(24):9189-93.
Aruffo A, et al. (1989) Expression of cDNA clones encoding the thymocyte antigens CD1a, b, c demonstrates a hierarchy of exclusion in fibroblasts. J Immunol. 143(5):1723-30.
Longley J, et al. (1989) Molecular cloning of CD1a (T6), a human epidermal dendritic cell marker related to class I MHC molecules. J Invest Dermatol. 92(4):628-31.