

### Source

Biotinylated Human MR1&B2M Complex Protein(MRM-H82W5) is expressed from human 293 cells (HEK293). It contains AA Arg 23 - Met 302 (Accession # [Q95460-1](#) (MR1) & [P61769-1](#) (B2M)).

Predicted N-terminus: Arg 23 & Ile 21

### Molecular Characterization

This protein carries a polyhistidine tag at the C-terminus, followed by an Avi tag (Avitag™)

The protein has a calculated MW of 36.3 kDa and 11.7 kDa. The protein migrates as 42-45 kDa and 13 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

### Labeling

*Biotinylation of this product is performed using Avitag™ technology. Briefly, the single lysine residue in the Avitag is enzymatically labeled with biotin.*

### Protein Ratio

Passed as determined by the HABA assay / binding ELISA.

### Endotoxin

Less than 1.0 EU per µg by the LAL method.

### Purity

>95% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

### Formulation

Lyophilized from 0.22 µm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

### Reconstitution

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

### Storage

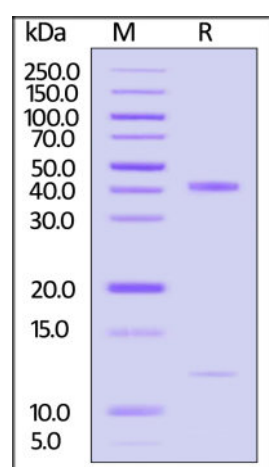
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

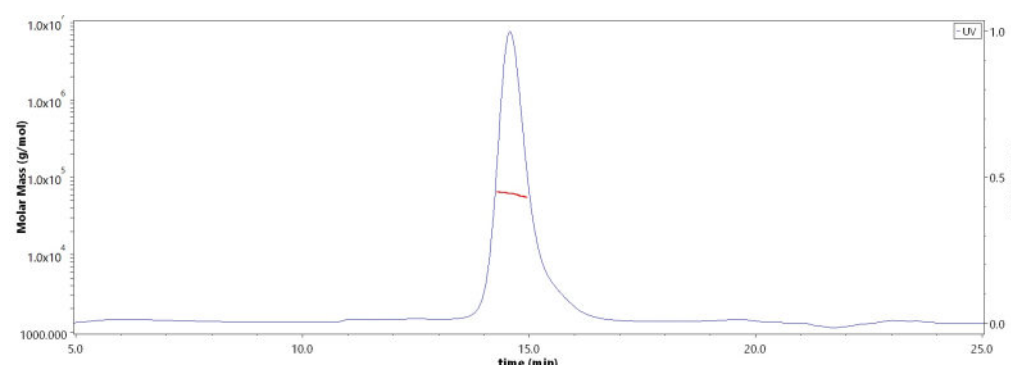
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

### SDS-PAGE



Biotinylated Human MR1&B2M Complex Protein on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.

### SEC-MALS



The purity of Biotinylated Human MR1&B2M Complex Protein (Cat. No. MRM-H82W5) is more than 90% and the molecular weight of this protein is around 50-65 kDa verified by SEC-MALS.

[Report](#)

### Background

MR1 is also known as MHC class I-related gene protein. Antigen-presenting molecule specialized in displaying microbial pyrimidine-based metabolites to alpha-beta T cell receptors (TCR) on innate-type mucosal-associated invariant T (MAIT) cells. In complex with B2M preferentially presents riboflavin-derived metabolites to semi-invariant TRAV1-2 TCRs on MAIT cells, guiding immune surveillance of the microbial metabolome at mucosal epithelial barriers. Signature pyrimidine-based

microbial antigens are generated via non-enzymatic condensation of metabolite intermediates of the riboflavin pathway with by-products arising from other metabolic pathways such as glycolysis. Typical potent antigenic metabolites are 5-(2-oxoethylideneamino)-6-D-ribitylaminouracil (5-OE-RU) and 5-(2-oxopropylideneamino)-6-D-ribitylaminouracil (5-OP-RU), products of condensation of 5-amino-6-D-ribitylaminouracil (5-A-RU) with glyoxal or methylglyoxal by-products, respectively.

## Clinical and Translational Updates

Please contact us via [TechSupport@acrobiosystems.com](mailto:TechSupport@acrobiosystems.com) if you have any question on this product.