Biotinylated Human HLA-DRA1*01:01&HLA-DRB1*04:01&GAD65 (NFFRMVISNPAAT) Complex Protein (Monomer, MALS verified)

Catalog # HL5-H82E6

Synonym

HLA-DRA1*0101 & HLA-DRB1*0401 & GAD65 (NFFRMVISNPAAT)

Source

Biotinylated Human HLA-DRA1*01:01&HLA-DRB1*04:01&GAD65 (NFFRMVISNPAAT) Complex Protein (HL5-H82E6) is expressed from human 293 cells (HEK293). It contains AA Ile 26 - Glu 216 (HLA-DRA1*01:01) & Gly 30 - Lys 227 (HLA-DRB1*04:01) & NFFRMVISNPAAT peptide (Accession # CAI2388006.1 (HLA-DRA1*01:01) & CAI9239961.1 (HLA-DRB1*04:01) & NFFRMVISNPAAT).
Predicted N-terminus: Ile 26 & Asn

Molecular Characterization

Biotinylated Human HLA-DRA1*01:01&HLA-DRB1*04:01&GAD65 (NFFRMVISNPAAT) Complex Protein is produced by co-expression of HLA-DRA1 and HLA-DRB1 loaded with GAD65 peptide.
This protein carries a polyhistidine tag at the C-terminus, followed by an Avi tag (Avitag™).
The protein has a calculated MW of 29.6 kDa and 29.2 kDa. The protein migrates as 38-42 kDa and 33-37 kDa when calibrated against Star Ribbon Pre-stained Protein Marker 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.

Purity

>90% 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

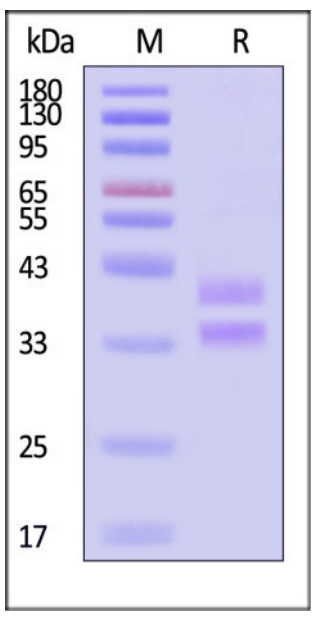
For long term storage, the product should be stored at lyophilized state at -20°C or lower.
Please avoid repeated freeze-thaw cycles.
This product is stable after storage at:

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

ACRO Quality Management System

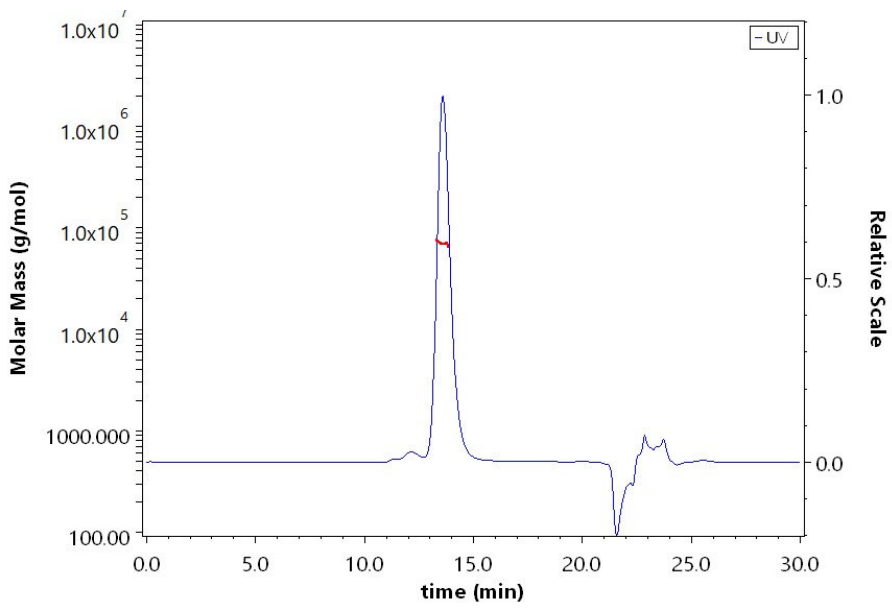
- QMS(ISO, GMP)
- Quality Advantages
- Quality Control Process

SDS-PAGE



Biotinylated Human HLA-DRA1*01:01&HLA-DRB1*04:01&GAD65 (NFFRMVISNPAAT) Complex Protein on SDS-PAGE under reducing (R)

SEC-MALS

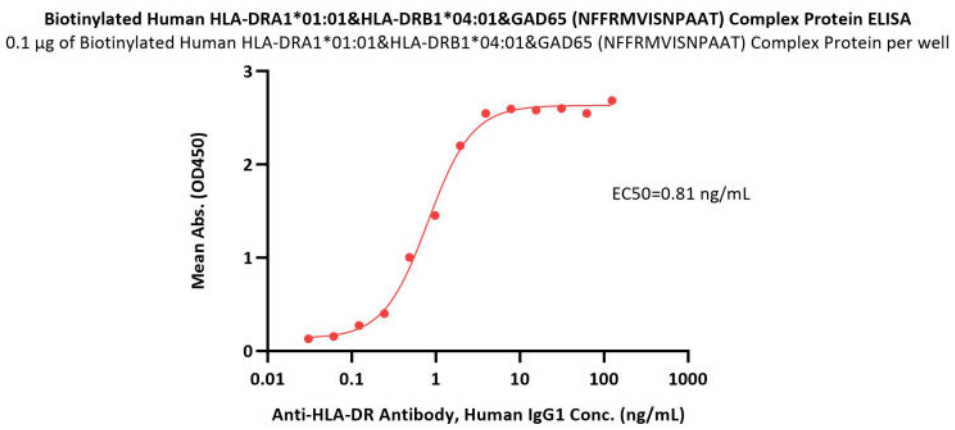


The purity of Biotinylated Human HLA-DRA1*01:01&HLA-DRB1*04:01&GAD65 (NFFRMVISNPAAT) Complex Protein (Cat. No. HL5-

condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90% (With Star Ribbon Pre-stained Protein Marker).

H82E6) is more than 90% and the molecular weight of this protein is around 60-85 kDa verified by SEC-MALS.

Bioactivity-ELISA



Immobilized Biotinylated Human HLA-DRA1*01:01&HLA-DRB1*04:01&GAD65 (NFFRMVISNPAAT) Complex Protein (Cat. No. HL5-H82E6) at 1 μg/mL (100 μL/well) on streptavidin (Cat. No. STN-N5116) precoated (0.5 μg/well) plate can bind Anti-HLA-DR Antibody, Human IgG1 with a linear range of 0.03-4 ng/mL (QC tested).

Background

The peptide NFFRMVISNPAAT, derived from the human autoantigen glutamic acid decarboxylase 65 (GAD65), is presented by the MHC class II molecule HLA-DRA1*01:01/HLA-DRB1*04:01. This specific peptide-MHC II complex is strongly associated with the genetic risk for type 1 diabetes (T1D), particularly in individuals carrying the HLA-DRB1*04:01 allele. Recognition of this complex by autoreactive $CD4^+$ T cells is a pivotal event in the autoimmune attack against pancreatic islet beta cells, making it a critical target for understanding the etiology of T1D and for developing antigen-specific immunotherapies.