



## Synonym

HLA-DRA1\*0101 & HLA-DRB1\*0401 & Influenza HA (PKYVKQNTLKLAT)

## Source

Unconjugated Human HLA-DRA1\*01:01&HLA-DRB1\*04:01&Influenza HA (PKYVKQNTLKLAT) Complex Protein (HLA-H52E3) 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) & PKYVKQNTLKLAT peptide (Accession # [CAI2388006.1](#) (HLA-DRA1\*01:01) & [CAI9239961.1](#) (HLA-DRB1\*04:01) & PKYVKQNTLKLAT).

Predicted N-terminus: Ile 26

## Molecular Characterization

Unconjugated Human HLA-DRA1\*01:01&HLA-DRB1\*04:01&Influenza HA (PKYVKQNTLKLAT) Complex Protein is produced by co-expression of HLA-DRA1 and HLA-DRB1 loaded with Influenza HA peptide.

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

The protein has a calculated MW of 29.8 kDa and 29.0 kDa. The protein migrates as 38-41 kDa and 33-36 kDa when calibrated against [Star Ribbon Pre-stained Protein Marker](#) under reducing (R) condition (SDS-PAGE) due to glycosylation.

## Purity

>90% as determined by SDS-PAGE.

>95% 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.**

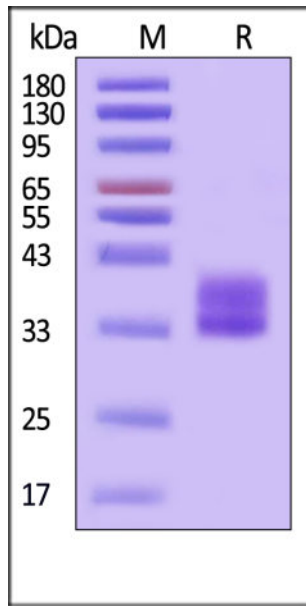
This product is stable after storage at:

- -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

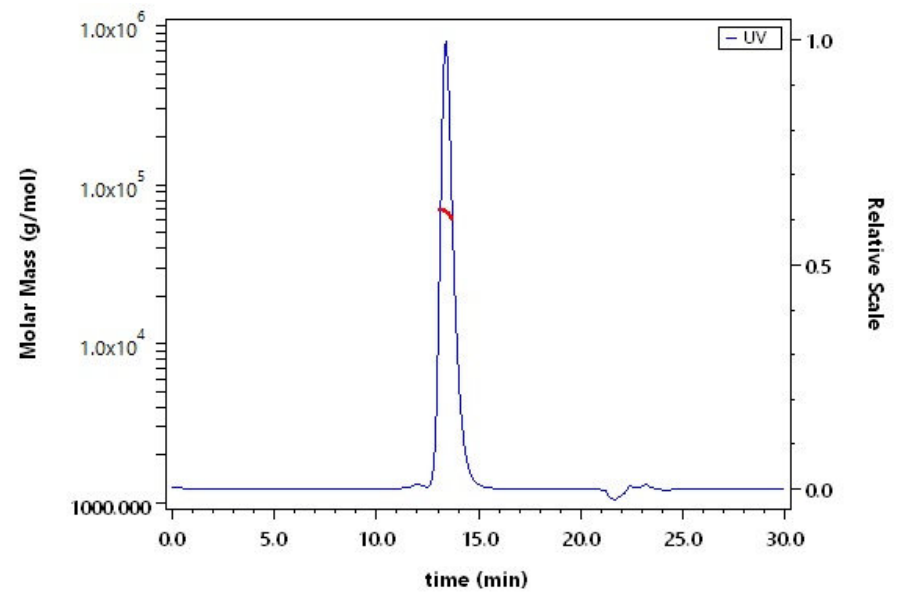
- [QMS\(ISO, GMP\)](#)
- [Quality Advantages](#)
- [Quality Control Process](#)

## SDS-PAGE



Unconjugated Human HLA-DRA1\*01:01&HLA-DRB1\*04:01&Influenza HA (PKYVKQNTLKLAT) Complex Protein on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90% (With [Star Ribbon Pre-stained Protein Marker](#)).

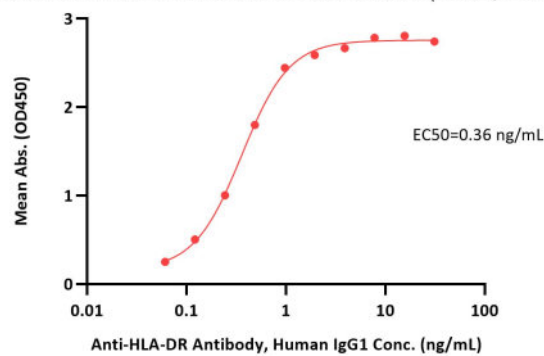
## SEC-MALS



The purity of Unconjugated Human HLA-DRA1\*01:01&HLA-DRB1\*04:01&Influenza HA (PKYVKQNTLKLAT) Complex Protein (Cat. No. HLA-H52E3) is more than 95% and the molecular weight of this protein is around 60-80 kDa verified by SEC-MALS.

## Bioactivity-ELISA

Unconjugated Human HLA-DRA1\*01:01&HLA-DRB1\*04:01&Influenza HA (PKYVKQNTLKLAT) Complex Protein ELISA  
0.1 µg of Unconjugated Human HLA-DRA1\*01:01&HLA-DRB1\*04:01&Influenza HA (PKYVKQNTLKLAT) Complex Protein per well



Immobilized Unconjugated Human HLA-DRA1\*01:01&HLA-DRB1\*04:01&Influenza HA (PKYVKQNTLKLAT) Complex Protein (Cat. No. HLA-H52E3) at 1 µg/mL (100 µL/well) can bind Anti-HLA-DR Antibody, Human IgG1 with a linear range of 0.06-1 ng/mL (QC tested).

## Background

The peptide PKYVKQNTLKLAT, derived from the hemagglutinin (HA) protein of influenza virus, is presented by the MHC class II molecule HLA-DRA1\*01:01/HLA-DRB1\*04:01. This complex serves as a prototypical target for virus-specific CD4<sup>+</sup> T helper cells, which are crucial for generating effective antibody responses and cytotoxic T lymphocyte (CTL) memory during influenza infection and vaccination. Studying this epitope has been fundamental to understanding adaptive immunity to viral pathogens and HLA-restricted immune recognition.

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