

**Synonym**

Integrin alpha 5 beta 1,ITGA5&ITGB1

**Source**

Biotinylated Human ITGA5&ITGB1 Heterodimer Protein, His,Avitag&Tag Free (IT1-H82Wa) is expressed from human 293 cells (HEK293). It contains AA Phe 42 - Tyr 995 (ITGA5) & Gln 21 - Asp 728 (ITGB1) (Accession # [P08648-1](#)(ITGA5) & [P05556-1](#)(ITGB1)).

Predicted N-terminus: Phe 42 (ITGA5) & Gln 21 (ITGB1)

**Molecular Characterization**



Biotinylated Human ITGA5&ITGB1 Heterodimer Protein, His,Avitag&Tag Free, produced by co-expression of ITGA5 and ITGB1, has a calculated MW of 112.4 kDa (ITGA5) and 83.7 kDa (ITGB1). Subunit ITGA5 is fused with an acidic tail at the C-terminus and followed by a polyhistidine tag and an Avi tag (Avitag™) and subunit ITGB1 contains no tag but a basic tail at the C-terminus. The non-reducing (NR) protein migrates as 100-115 kDa (ITGA5) and 135-150 kDa (ITGB1) respectively due to glycosylation.

**Biotinylation**

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

**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**

>90% as determined by SDS-PAGE.

**Formulation**

Lyophilized from 0.22 µm filtered solution in 50 mM Tris, 150 mM NaCl, pH7.5. Normally trehalose is added as protectant before lyophilization.

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**

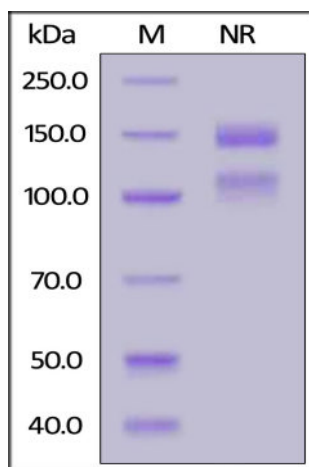
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

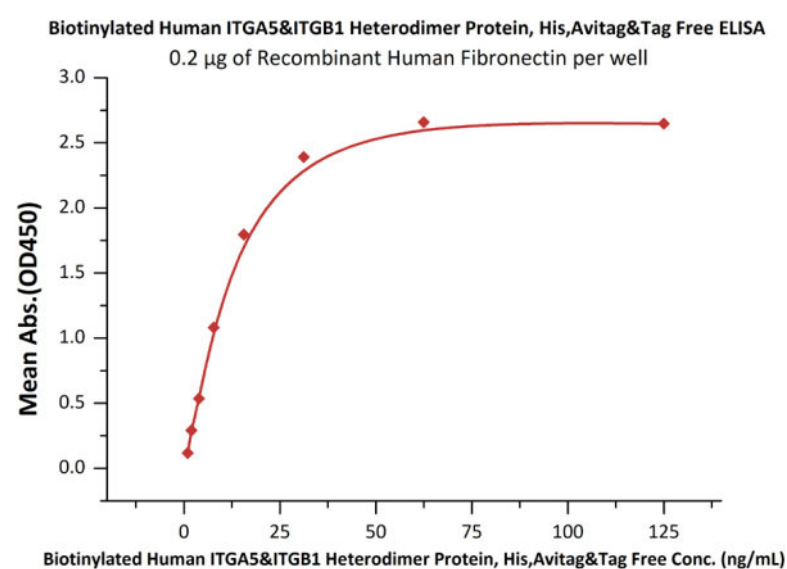
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

**SDS-PAGE**



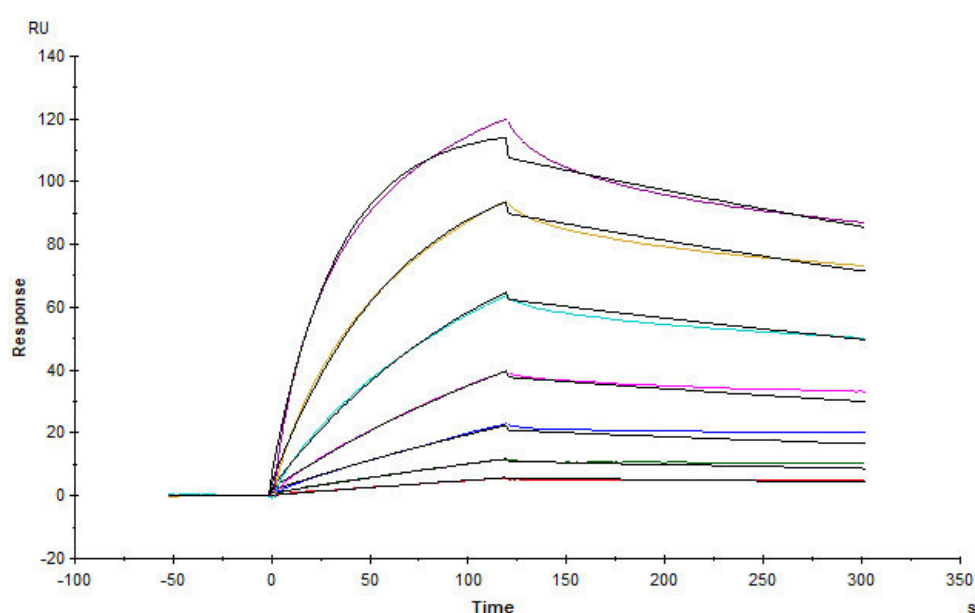
Biotinylated Human ITGA5&ITGB1 Heterodimer Protein, His,Avitag&Tag Free on SDS-PAGE under non-reducing (NR) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 90%.

**Bioactivity-ELISA**



Immobilized Recombinant Human Fibronectin at 2 µg/mL (100 µL/well) can bind Biotinylated Human ITGA5&ITGB1 Heterodimer Protein, His,Avitag&Tag Free (Cat. No. [IT1-H82Wa](#)) with a linear range of 1-16 ng/mL (QC tested).

### Bioactivity-SPR



Biotinylated Human ITGA5&ITGB1 Heterodimer Protein, His,Avitag&Tag Free (Cat. No. [IT1-H82Wa](#)) captured on Biotin CAP-Series S Sensor Chip can bind Human Fibronectin with an affinity constant of 4.4 nM as determined in a SPR assay (Biacore T200) (Routinely tested).

### Background

Integrin alpha 5 beta 1 / Integrin  $\alpha 5\beta 1$ , which is a major cellular receptor for the extracellular matrix protein fibronectin and plays a fundamental role during mammalian development., is composed of  $\alpha 5$  (ITGA5/CD49e) and  $\beta 1$  (ITGB1/CD29) subunits. Integrins are adhesion receptors that transmit bidirectional signals across the plasma membrane. The Integrin alpha 5 beta 1 and its primary extracellular matrix ligand fibronectin (Fn) are of great biological importance.

### Clinical and Translational Updates

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