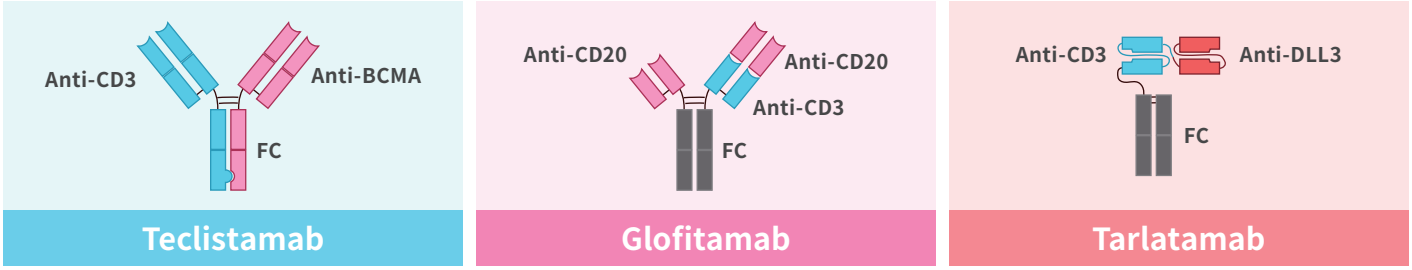
High-Quality CD3 Proteins Empower TCE Development

T-cell engagers (TCEs) have emerged as a powerful immunotherapy strategy, leveraging bispecific or multispecific antibodies to bridge T cells via CD3 protein with tumor-associated antigens. This interaction triggers T cell activation, enabling high specificity and potent tumor cell killing.

As a central target for T cell activation, the structural integrity and binding capability of CD3 protein are critical determinants of TCE efficacy. Globally approved TCE therapeutics—including Teclistamab (CD3×BCMA), Glofitamab (CD3×CD20), and Tarlatamab (CD3×DLL3)—demonstrate that despite their diverse antibody architectures, all rely on efficient CD3 engagement for functionality.



To support the diverse needs of TCE drug development, we offer a series of high-activity CD3 proteins, including CD3E&CD3D and CD3E&CD3G heterodimers, as well as CD3E, CD3D, and CD3G monomers. These products empower the screening and optimization of TCE drugs and accelerate the efficient translation of innovative therapies.

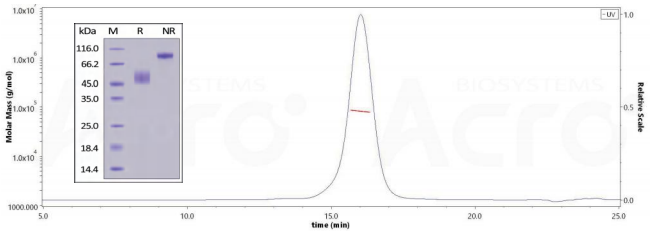
Product Features

- ***Comprehensive Product Range:*** CD3E, CD3D, CD3G, CD3E&CD3D, CD3E&CD3G
- ***Structural Homogeneity:*** CD3E&CD3D and CD3E&CD3G are verified as 1:1 heterodimer by non-reductive electrophoresis and MALS
- ***Multiple Tags:*** His, His & Avi, Fc, Llama Fc, Flag, etc.
- ***Multiple Species:*** Human, Mouse, Cynomolgus, Rat, Rabbit, etc.
- ***High Activity:*** Validated through binding with various TCEs and clinical-stage bispecific antibodies

Scan to learn more!

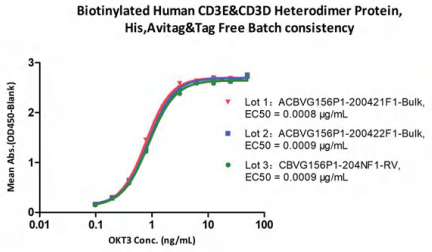
Verification Data

1:1 Heterodimer Verified by SDS-PAGE and MALS



Human CD3E&CD3D Heterodimer Protein, Fc Tag&Fc Tag (Cat. No. CDD-H5255) on SDS-PAGE under reducing (R) and non-reducing (NR) conditions and the purity of the protein is greater than 90%. The purity of the protein is more than 90% and around 75-85 kDa verified by SEC-MALS.

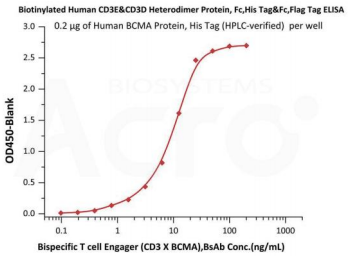
High Binding Affinity with Low Batch-to-Batch Variability



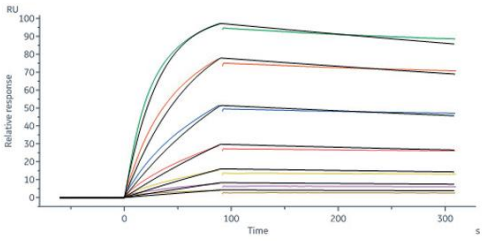
Immobilized Biotinylated Human CD3E&CD3D Heterodimer Protein, His,Avitag& Tag Free (Cat. No. CDD-H82W6) at 1 μg/mL (100 μL/well) on Streptavidin (Cat. No. STN-N5116) precoated (0.5 μg/well) plate, can bind Monoclonal Anti-Human CD3 Antibody, Mouse IgG2a (Clone: OKT3) (Cat. No. CDE-M120a) with a linear range of 0.2-6 ng/mL (QC tested), and batch differences EC50<0.0001 μg/mL.

Designed for Diverse Applications Across All Stages of Drug Development

Application 1: Early Bispecific Antibody Discovery & Molecular Screening

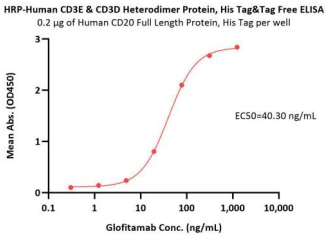


Immobilized Human BCMA Protein, His Tag (HPLC-verified) (Cat. No. BCA-H522y) at 2 μg/mL, add increasing concentrations of Bispecific T cell Engager (CD3×BCMA) and then add Biotinylated Human CD3E& CD3D Heterodimer Protein, Fc,His Tag&Fc,Flag Tag, primary amine labeling (Cat. No. CDD-H82W0) at 1 μg/mL. Detection was performed using HRP-conjugated streptavidin with sensitivity of 0.39 ng/mL (Intact assay, Routinely tested).

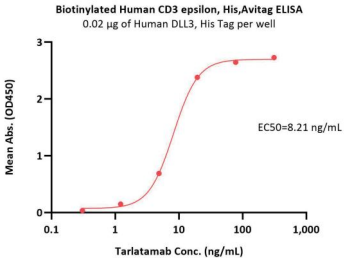


Bispecific T-cell Engager (CD3×DLL3) captured on Protein A Chip can bind Human CD3 epsilon, His Tag (Cat. No. CDE-H5223) with an affinity constant of 0.843 nM as determined in a SPR assay (Biacore 8K).

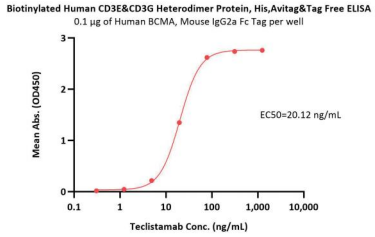
Application 2: Drug Process Development & Manufacturing QC



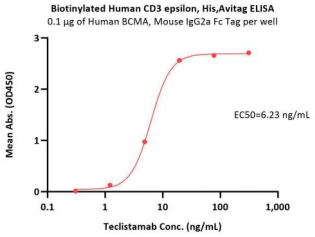
Immobilized Human CD20 Full Length Protein, His Tag (Cat. No. CD0-H52H3) at 2 μg/mL, add increasing concentrations of Glofitamab and then add HRP-Human CD3E&CD3D Heterodimer Protein, His Tag&Tag Free (Cat. No. CDD-HR2W3) at 1 μg/mL. Detection was performed using HRP-conjugated Streptavidin (Cat. No. STN-NH913) with sensitivity of 40.30 ng/mL (Routinely tested).



Immobilized Human DLL3, His Tag (Cat. No. DL3-H52H4) at 0.2 μg/mL, add increasing concentrations of Tarlatamab and then add Biotinylated Human CD3 epsilon, His,Avitag (Cat. No. CDE-H82E1) at 0.2 μg/mL. Detection was performed using HRP-conjugated Streptavidin (Cat. No. STN-NH913) with sensitivity of 8.21 ng/mL (Routinely tested).

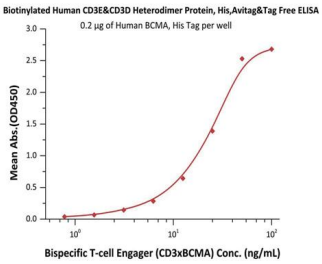


Immobilized Human BCMA, Mouse IgG2a Fc Tag (Cat. No. BCA-H5253) at 1 μg/mL, add increasing concentrations of Teclistamab and then add Biotinylated Human CD3E&CD3G Heterodimer Protein, His, Avitag&Tag Free (Cat. No. CDG-H82W3) at 1 μg/mL. Detection was performed using HRP-conjugated Streptavidin (Cat. No. STN-NH913) with sensitivity of 20.12 ng/mL (Routinely tested).



Immobilized Human BCMA, Mouse IgG2a Fc Tag (Cat. No. BCA-H5253) at 1 μg/mL, add increasing concentrations of Teclistamab and then add Biotinylated Human CD3 epsilon, His,Avitag (Cat. No. CDE-H82E1) at 0.2 μg/mL. Detection was performed using HRP-conjugated Streptavidin (Cat. No. STN-NH913) with sensitivity of 6.23 ng/mL (Routinely tested).

Application 3: Clinical Pharmacokinetics (PK) Analysis



Immobilized Human BCMA, His Tag (Cat. No. BCA-H522y) at 2 μg/mL, add increasing concentrations of Bispecific T cell Engager (CD3×BCMA) in 10% human serum and then add Biotinylated Human CD3E&CD3D Heterodimer Protein, His,Avitag&Tag Free (Cat. No. CDD-H82W6) at 0.2 μg/mL. Detection was performed using HRP-conjugated streptavidin with sensitivity of 15 ng/mL.

We also provide a broad selection of other popular TCE target proteins, such as BCMA, CD20, and DLL3, along with related services. Feel free to contact us for more information!