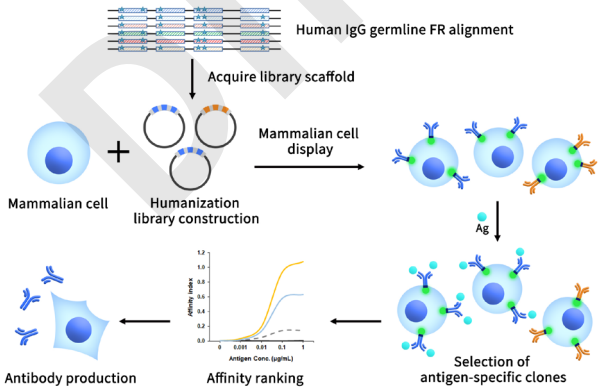
DIMA BIOTECH
Recombinant mAbs and proteins

Antibody Humanization / Affinity Maturation

Antibody humanization is important for therapeutic antibody development, especially for the candidate antibodies derived from animal sources. DIMA Biotech has developed a proprietary mammalian display platform for antibody humanization and affinity maturation, **DiLibrary™ antibody engineering platform**. With this platform, we can deliver a panel of humanized variants with improved affinity than its parental antibody. In addition to improved affinity, the engineered clones also exhibit improved developability for downstream development, such as high expression level and low aggregation tendency. Therefore, DiLibrary™ system is a superior antibody engineering platform to help us optimize antibody molecules with better developability.

Platform Workflow



Services & Deliverables

Service	Deliverable
Construct humanized antibody expression library	Progress Report - Validation of antibody expression on cell membrane - Validation of antibody-antigen flow cytometry analysis
Antibody affinity screening & ranking	Progress Report - Affinity ranking result
Antibody cloning & sequencing	Progress Report - DNA cloning status
Antibody production & affinity testing	QC report for selected humanized antibodies - Antibody sequences - FACS binding - SPR examination
PTM removal	Antibody sequence after PTM removal

Case Studies

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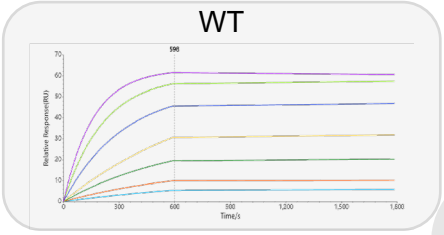
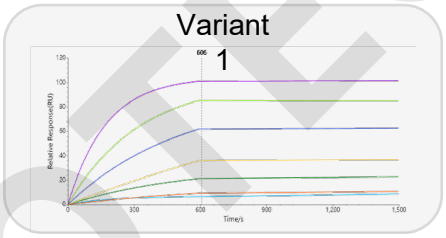
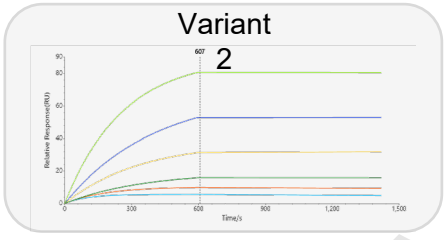
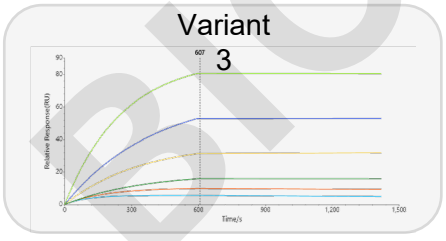
Humanization of Anti-BCMA rabbit mAb

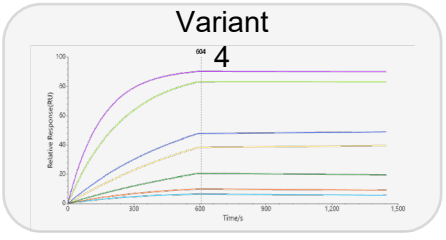
Ligand	Analyte	Ka (1/Ms)	Kd (1/s)	KD (M)	Rmax (RU)
Protein B	WT	4.388E+4	1.175E-5	2.67E-10	65.3
Protein B	Variant 1	3.102E+4	4.353E-6	1.40E-10	105.2
Protein B	Variant 2	2.860E+4	4.548E-6	1.59E-10	78.9
Protein B	Variant 3	6.453E+4	1.025E-6	1.50E-11	81.3
Protein B	Variant 4	3.351E+4	1.906E-6	5.60E-11	92.1











Humanization of Anti-CEACAM5 rabbit mAb

Ligand	Analyte	Ka (1/Ms)	Kd (1/s)	KD (M)	Rmax (RU)
Protein C	WT	6.300E+4	2.327E-5	3.69E-10	88.9
Protein C	Variant 1	5.535E+4	1.431E-5	2.58E-10	82.1
Protein C	Variant 2	5.500E+4	1.073E-6	1.90E-11	79.8