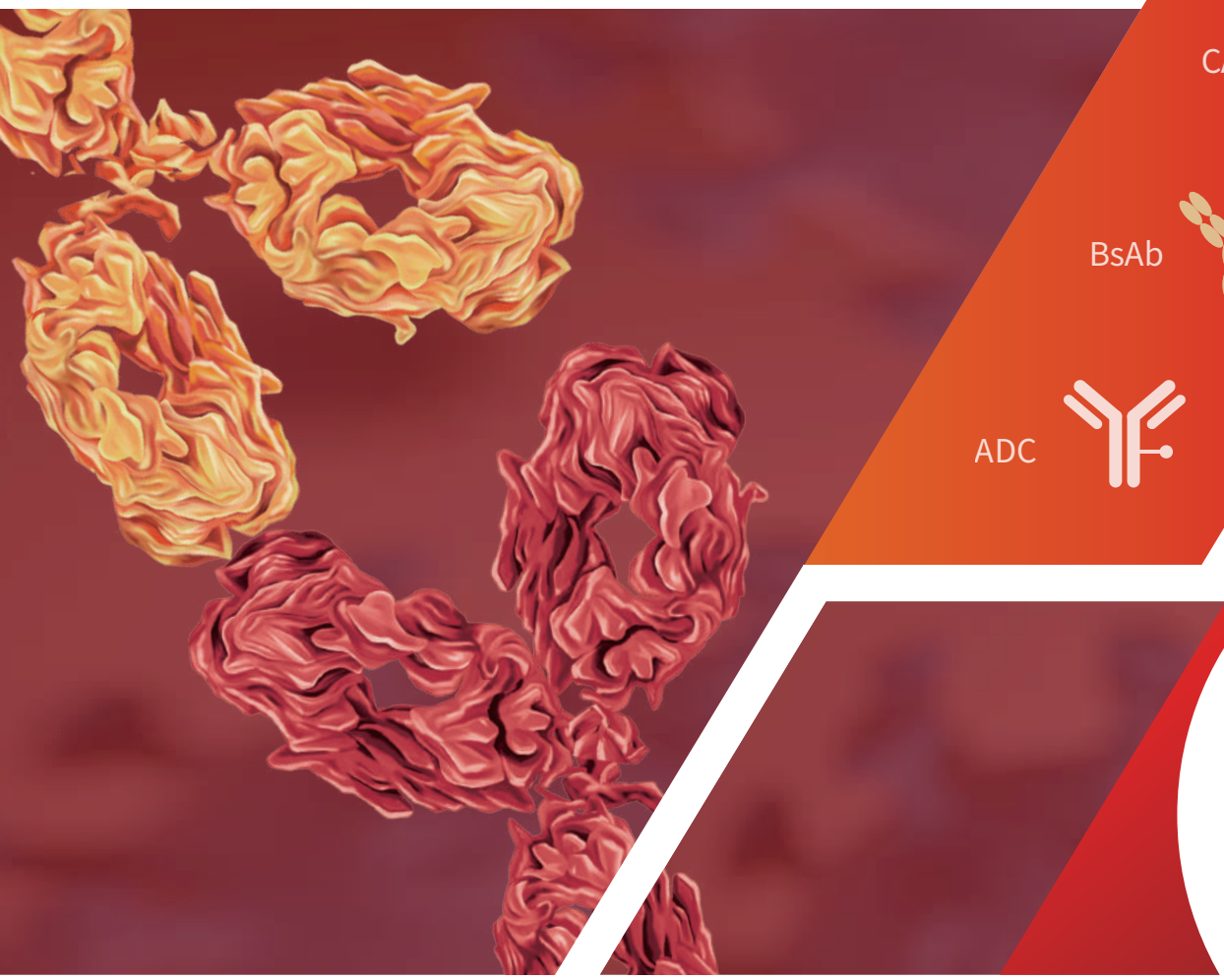
BIOSYSTEMS Acro

Comprehensive Solutions For Anti-idiotypic Antibody Development And Applications



mAb

CAR-T

BsAb

ADC

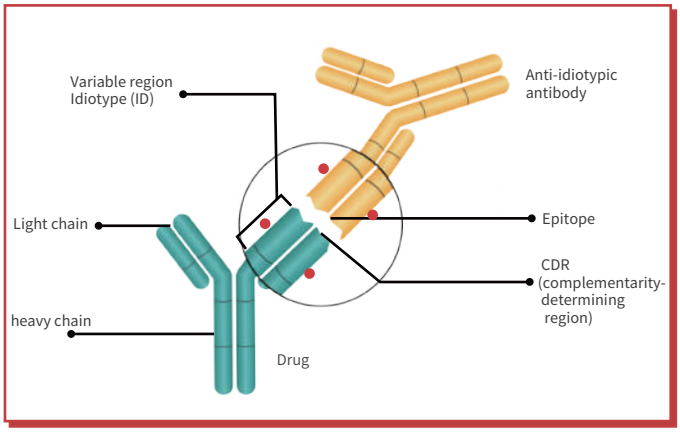
PK/ADA Assay

www.acrobiosystems.com

Content

Background

Anti-idiotypic Antibody Introduction



Anti-idiotypic antibody

Idiotype

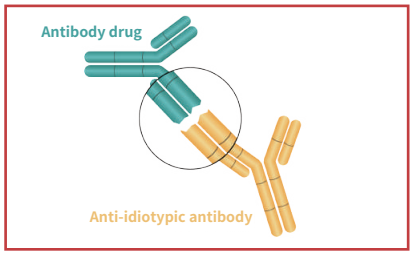
An Idiotype (ID) within an antibody's VH-VL site (the complementarity-determining region) is specific to an epitope, which is the characteristic structure of each antibody.

Anti-idiotypic antibody

Also known as "anti-antibodies", anti-idiotypic antibodies are not the usual secondary antibodies that recognize the constant region of the antibody, but are antibodies that target the variable region idiotype.

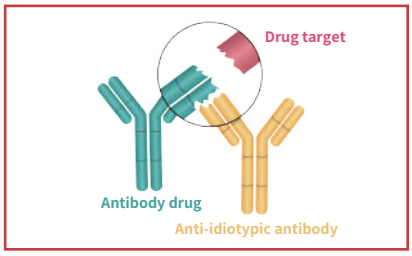
An Anti-idiotypic antibody recognizes the variable region and specifically binds to an antibody, usually an antibody drug. The use of anti-idiotypic antibodies during drug development is very extensive: It can be used as an important reference for immunogenicity analysis, or also be an essential reagent to specifically detect antibody drug levels for pharmacokinetics research.

Types of Anti-idiotypic Antibodies



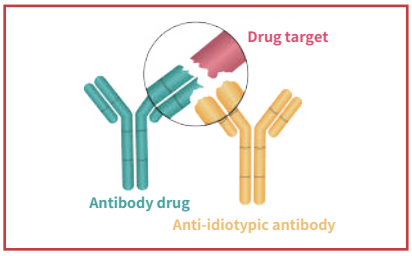
Antigen blocking type (Neutralizing)

- Paratope specific
- Blocks antigen-antibody binding
- Detection of free antibody drugs or neutralizing antibodies



Antigen non-blocking type (Non-neutralizing)

- Paratope non-specific
- Does not block antigen-antibody binding
- Detection of total antibody drugs (free, semi-bound, bound)



Drug target compound type

- Specific binding to drug target complex
- Does Not block antigen- antibody binding
- Specific detection of bound antibody drugs

▶ Anti-idiotypic Antibody Application

Overview of anti-idiotypic antibody applications

Application	ADA assay	PK assay
Antibody species	Rabbit	Mouse
Antibody type	Polyclonal antibody	Monoclonal antibody
Antibody action	Positive reference	Neutralizing antibody: free drug Non-neutralizing antibody: total drug
Sensitivity	100 ng/mL	Related to dosage

■ ADA Assay: An important reference for immunogenicity analysis

>>> Immunogenicity （Anti-drug-antibody assay, ADA assay）

Qualitative - Detection of anti-drug antibody levels in serum/plasma of preclinical/clinical samples

Immunogenicity is defined as the ability of a drug and/or its metabolites to induce an immune response or immune-related event to itself or an associated protein. (Technical guidelines for drug immunogenicity studies, 2021.)

Immunogenicity has a wide range of effects. Some unexpected immune reactions may neutralize the biological activity of drugs or induce cross-immune reactions with corresponding endogenous proteins, as well as cause allergic reactions and cytokine release syndrome. Clinically, the immunogenicity of the drug may have no significant effect on the patient, or may significantly affect the pharmacokinetics(PK), pharmacodynamics (PD), safety, and efficacy of the product.

Hazards of ADA

Antigen non-blocking type

Features:

Combined with drugs

Interfere with pharmacokinetics and toxicokinetics inspection, causing hypersensitivity reactions

Risk level: low

Drug target compound type

Features:

Forms a complex with the drug that prolongs or shortens it's half life

Extends or reduces drug exposure time

Risk level: medium

Antigen blocking type

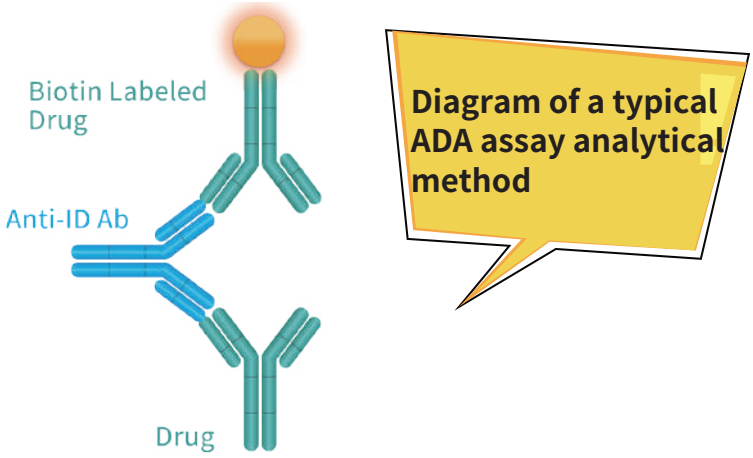
Features:

Forms complex with the drug preventing it from binding to its target

Reduce the efficacy of the drug

Risk level: high

Due to the similarity between anti-idiotypic antibody and anti-drug antibody, anti-idiotypic antibody can be used as the positive control of anti-drug antibodies in the analysis of immunogenicity.

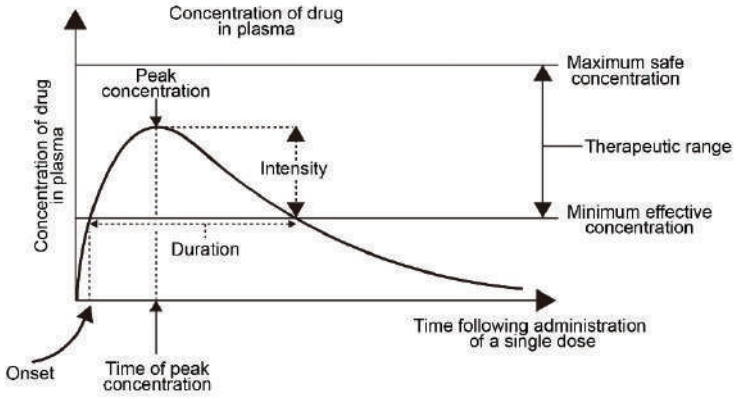


PK assay - Specific detection of antibody drug levels *in vivo*

>>>Pharmacokinetics research（Pharmacokinetics, PK)

Quantification - Determination of drug content in serum / plasma over time in preclinical / clinical samples

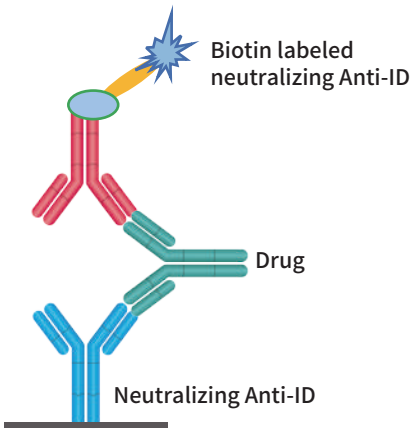
Pharmacokinetics is a subject that quantitatively studies the absorption, distribution, metabolism and excretion of drugs *in vivo*, and expounds the dynamic laws by using mathematical principles and methods. Since blood is the medium of drugs and their metabolites in the organism, and the drug concentration in various body fluids and tissues is in a certain proportion to in blood, blood is the most representative and commonly used sample. A *Blood Drug Concentration Time Curve* is used to reflect the metabolism of drugs within the body.



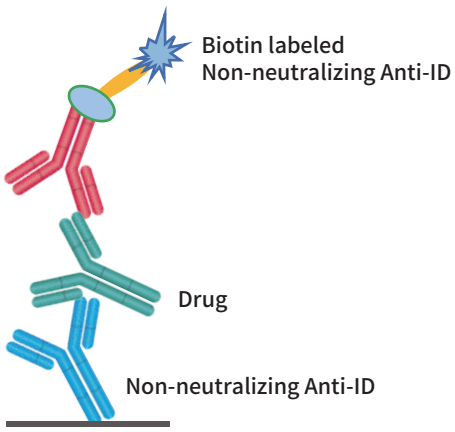
Plasma Drug Concentration Time Curve

Tel: +1 800-810-0816 · Web: www.acrobiosystems.com Email: order@acrobiosystems.com

Schematic Representation of a Typical PK Detection Methods



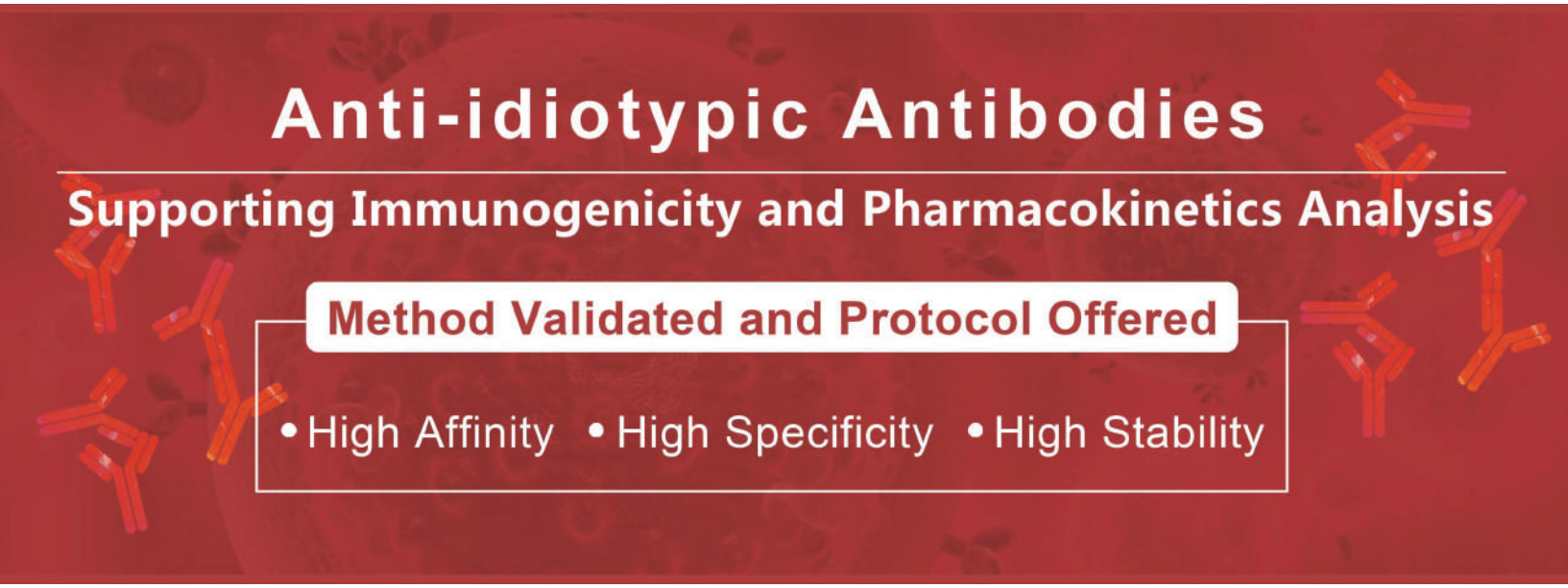
Detection of free antibody drugs



Detection of total antibody drugs

▶ ACRO Anti-idiotypic Antibody Products

To support your studies, ACROBiosystems has developed a series of high affinity, high specificity anti-idiotypic antibodies for R & D customers to perform immunogenicity analysis and pharmacokinetic studies. For each anti-idiotypic antibody, we will develop the corresponding protocol according to different application scenarios, hoping to help you accelerate your drug development process. Products currently covered include adalimumab, rituximab, cetuximab, trastuzumab, and bevacizumab.



Cat No.	Antigen	Neutralizing Activity	Affinity Ko.nM	Application
TRB-Y1b	Trastuz*mab F(ab')2	Neutralizing Antibody	/	PK bridging ELISA with TRB-Y5b Neutralizing assay Indirect ELISA
TRB-Y5b	Trastuz*mab F(ab')2	Neutralizing Antibody	/	PK bridging ELISA with TRB-Y1
ADB-Y19	Adalim*mab F(ab')2	Neutralizing Antibody	0.0013	ADA assay Neutralizing assay Indirect ELISA
ADB-Y23b	Adalim*mab F(ab')2	Non-Neutralizing Antibody	/	PK bridging ELISA with ADB-BY17 Indirect ELISA
ADB-BY17	Adalim*mab F(ab')2	Neutralizing Antibody	/	PK bridging ELISA with ADB-Y23
CEB-Y27	Cetux*mab F(ab')2	Neutralizing Antibody	0.007	ADA assay Neutralizing assay Indirect ELISA
CEB-Y28	Cetux*mab F(ab')2	Neutralizing Antibody	0.0015	ADA assay Neutralizing assay Indirect ELISA
CEB-Y29	Cetux*mab F(ab')2	Neutralizing Antibody	/	PK bridging ELISA with CEB-BY31 Neutralizing assay Indirect ELISA
CEB-Y31	Cetux*mab F(ab')2	Non-Neutralizing Antibody	0.421	ADA assay Indirect ELISA
CEB-BY31	Cetux*mab F(ab')2	Non-Neutralizing Antibody	/	PK bridging ELISA with CEB-Y29
RIB-Y36	Ritux*mab F(ab')2	Neutralizing Antibody	0.01	ADA assay Neutralizing assay Indirect ELISA
RIB-Y37	Ritux*mab F(ab')2	Neutralizing Antibody	/	PK bridging ELISA Neutralizing assay Indirect ELISA
BEB-Y12	Bevaciz*mab F(ab')2	Neutralizing Antibody	0.0828	Neutralizing assay Indirect ELISA
BEB-Y9	Bevaciz*mab F(ab')2	Neutralizing Antibody	1.92	ADA assay Indirect ELISA
BEB-Y10	Bevaciz*mab F(ab')2	Neutralizing Antibody	/	PK bridging ELISA with BEB-BY13 Neutralizing assay Indirect ELISA
BEB-Y13	Bevaciz*mab F(ab')2	Neutralizing Antibody	/	PK bridging ELISA with BEB-Y10

Preclinical and clinical PK studies and immunogenicity studies of CAR-T cell therapeutics are also important. However, current available assay reagents are not suited to the needs of PK and ADA research due to complex cell compositions within samples, low CAR-T cell content, and a strong non-specific background. To address this challenge, ACROBiosystems has developed a series of highly sensitive and specific anti-idiotypic antibodies that are suitable for the detection of CAR-T in preclinical and clinical samples by flow cytometry.

Molecule	Cat. No.	Product Description	Systems
FMC63 ADA	FM3-HPY53	PE-Labeled Monoclonal Anti-FMC63 scFv Antibody, Mouse IgG1 (Y45) (Site-specific conjugation)	HEK293
	FM3-Y45P1	Monoclonal Anti-FMC63 scFv Antibody, Mouse IgG1 (Y45) (HEK293)	HEK293
	FM3-Y45	Monoclonal Anti-FMC63 scFv Antibody, Mouse IgG1 (Y45)	Hybridoma
	FM3-Y45A1	Monoclonal Anti-FMC63 scFv Antibody, Mouse IgG1 (Y45) (Carrier-free) (recommended for ADA assay)	HEK293
	FM3-FY45	FITC-Labeled Monoclonal Anti-FMC63 scFv Antibody, Mouse IgG1 (Y45)	Hybridoma
	FM3-BY54	Biotinylated Monoclonal Anti-FMC63 scFv Antibody, Mouse IgG1, Avitag™ (Y45)	HEK293
	FM3-BY45	Biotinylated Monoclonal Anti-FMC63 scFv Antibody, Mouse IgG1 (Y45)	Hybridoma

Furthermore, to facilitate our customers' application, ACROBiosystems has also developed a series of ELISA quantitative detection kits to quantify blood antibody concentration for preclinical and clinical blood samples. This series of products has proven to be low background, universal fast, high batch consistency, and other outstanding experimental performance.

Cat. No.	Product Description	Standard
EPH-V1	ELISA Assay Kit for Anti-PD-1 h-mAb in Human Serum	96/480 tests
EPM-V1	ELISA Assay Kit for Anti-PD-1 h-mAb in Mouse Serum	96/480 tests
EPC-V1	ELISA Assay Kit for Anti-PD-1 h-mAb in Monkey Serum	96/480 tests
EHH-V1	ELISA Assay Kit for Anti-HER-2 h-mAb in Human Serum	480 tests
EHM-V1	ELISA Assay Kit for Anti-HER-2 h-mAb in Mouse Serum	480 tests
EHC-V1	ELISA Assay Kit for Anti-HER-2 h-mAb in Monkey Serum	480 tests
ECH-V1	ELISA Assay Kit for Anti-CTLA-4 h-mAb in Human Serum	96/480 tests
ECM-V1	ELISA Assay Kit for Anti-CTLA-4 h-mAb in Mouse Serum	96/480 tests
ECC-V1	ELISA Assay Kit for Anti-CTLA-4 h-mAb in Monkey Serum	96/480 tests

Anti-idiotypic Antibody Development Service

ACROBiosystems also provides a one-stop service including antigen preparation, development of monoclonal anti-idiotypic antibodies, polyclonal anti-idiotic antibodies, pharmacokinetic test kits and immunogenicity test kits to meet the diverse needs of our customers.

Name	Timeline	Delivery	Price
Anti-idiotypic rabbit polyclonal antibody preparation 	8-10weeks	1.Pre-immunization serum 2.Rabbit antigen serum (can be prepared as freeze-dried powder) 3.1-10mg immunoaffinity chromatography purified antibody IgG, which can be freeze-dried (for long-term storage). If need to add preservatives and protein stabilizers, please inform us 4.1-3mg of synthetic antigen 5.Complete experiment report	We will work with you to develop a customized plan in accordance to your needs. This includes one-on-one service with our project team to ensure we meet the standards you expect from ACROBiosystems. Scan for inquiry
Anti-idiotypic mouse monoclonal antibody preparation 	4-5months	1.Subclonal cell line 2.Ascites (freeze-dried powder) 3.IgG: (immunopurified) (lyophilized powder) 4.IgG: (Protein G purification) (lyophilized powder) 5.Prepare report	
Development of the PK/ADA assay kit	6-8weeks	1.Methodology verification report 2.Instructions, COA 3.ELISA kit	

▶ Anti-idiotypic Antibody Development Timing

■ It is recommended to initiate development at the time of stable cell line construction.

According to the NMPA, the pilot-scale samples should be used for pharmacokinetic and immunogenicity analysis. The development period of anti-idiotypic monoclonal antibodies for pharmacokinetic analysis is about half a year, anti-idiotypic polyclonal antibodies for immunogenicity analysis is around 2 to 3 months, and the establishment period of ELISA method is about 2 months. Therefore, it is suggested that the development of anti-idiotypic antibodies should be carried out at the latest in the construction stage of stable cell lines, to avoid delays in the clinical application of drugs.

6 months

Molecular discovery 4 months

Molecular optimization 4 months

Research on Drug Formation 7 months

Cell line construction 7 months

Process development,scale-up

12 months

Analytical method development, validation

12 months

Preparation, Stability, Packaging Materials

3 months

Toxicology sample production

6 months

IND

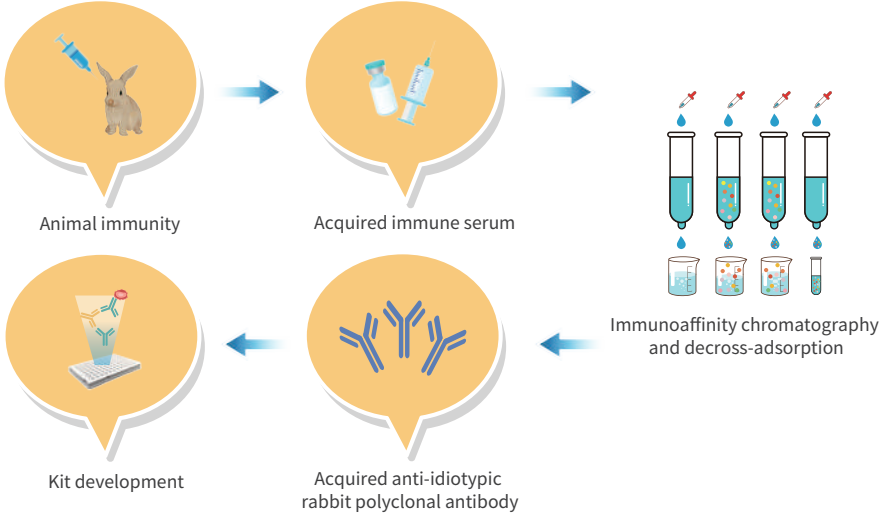
Development of anti-idiotypic antibodies 6-9 months ahead of schedule.

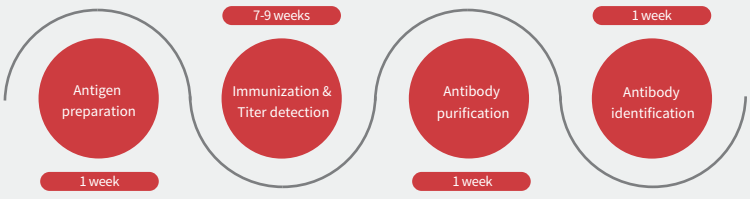
preclinical PK assay
preclinical ADA assay

Development of anti-idiotypic antibodies 5 months ahead of schedule.

clinical PK assay
clinical ADA assay

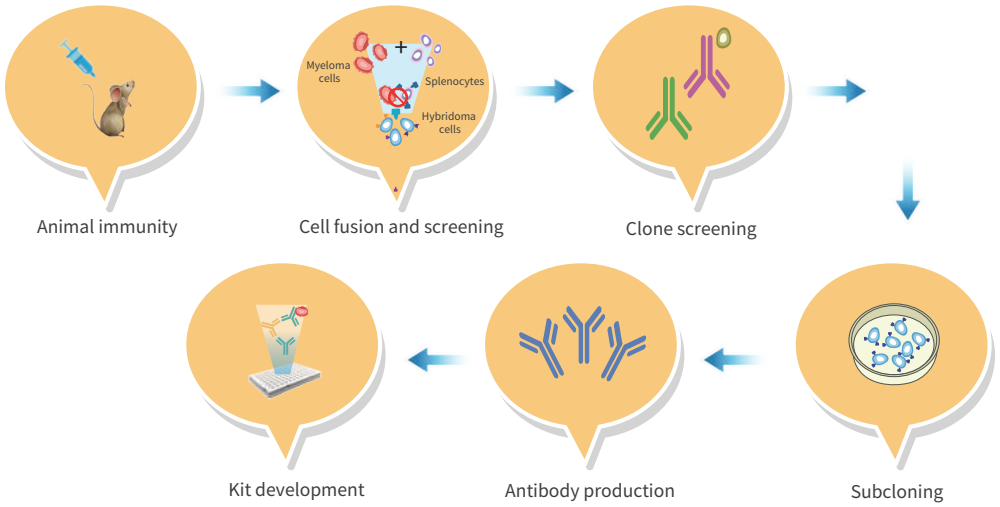
▶ Development of Anti-idiotypic Rabbit Polyclonal Antibody

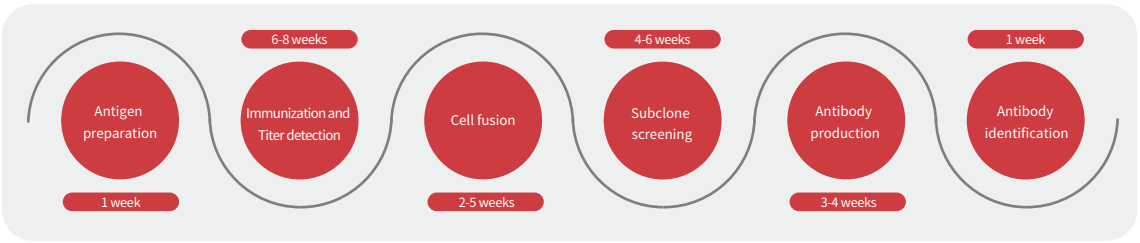




Tel: +1 800-810-0816 · Web: www.acrobiosystems.com Email: order@acrobiosystems.com

Development of Anti-idiotypic Mouse Monoclonal Antibody

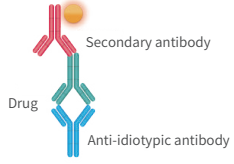
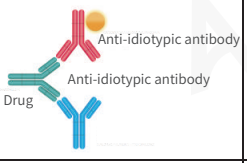
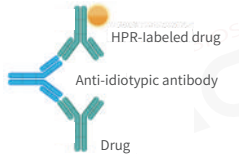




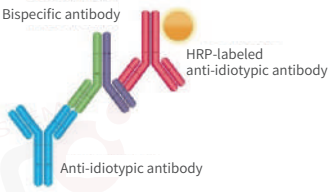
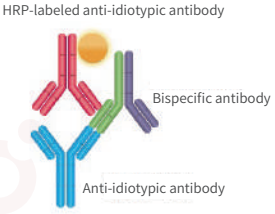
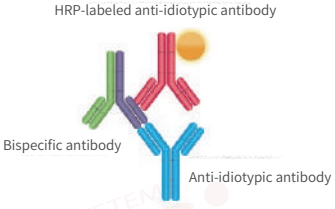
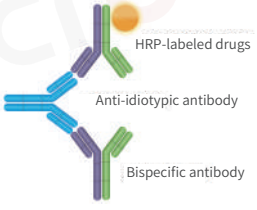
Development of Anti-idiotypic Antibodies for Different Types of Biological Drugs

Anti-idiotypic antibodies are the key tool reagent of PK / ADA assay. In order to obatin accurate and effective biololgical analytical methods and accelerate the project timeline, it is critical to outline the development strategy of anti-idiotypic antibodies.

Development of Anti-idiotypic Antibodies for Monoclonal Antibody Drugs

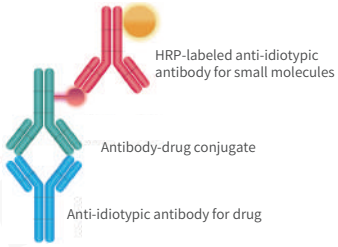
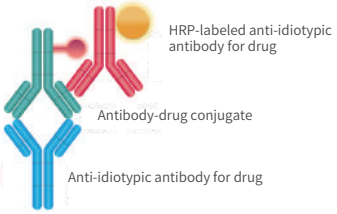
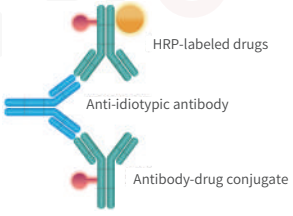
Use	Development strategy	Schematic representation	Advantages	Limitations
PK assay	Development of an anti-idiotypic antibody targeting the variable region of the drug		Only one anti-idiotypic antibody needs to be developed; Low costs	Specificity is general, only suitable for drugs containing Fc domains
	Development of a pair of anti-idiotypic antibodies targeting the variable region of a drug		High specificity and accuracy	Development is difficult
ADA assay	Development of a multi-antibody targeting the drug' s variable region		/	/

Development of Anti-idiotypic Antibodies for Bispecific Antibodies

Use	Target	Development strategy	Schematic representation
PK assay	Complete bispecific antibody	Development of paired anti-idiotypic antibodies for two units	
	A unit	Development of paired anti-idiotypic antibodies, targeting the A unit	
	B unit	Development of paired anti-idiotypic antibodies, targeting the B unit	
ADA assay	Complete bispecific antibody	Development of a multi-antibody against full-length antibody (variable region)	

Tel: +1 800-810-0816 · Web: www.acrobiosystems.com Email: order@acrobiosystems.com

Development of Anti-idiotypic Antibodies for ADC Drugs

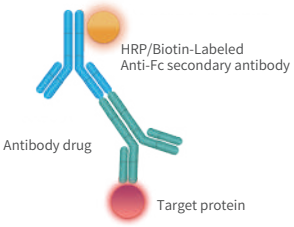
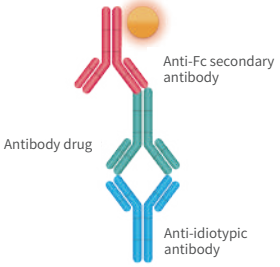
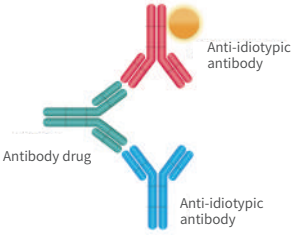
Use	Target	Development Strategy	Schematic Representation
PK assay	Antibody-drug conjugate	Development of paired anti-idiotypic antibodies for antibodies and small molecules	
	Antibody	Development of paired anti-idiotypic antibodies that target antibodies	
	Free small molecules	/	LC-MS
ADA assay	Antibody-drug conjugate	Develop a multi-antibody for ADC	

Development of Anti-idiotypic Antibodies for CAR-T Drugs

Use	Target	Development Strategy	Method
PK Assay	scFv	Development of an anti-idiotypic antibody for scFv	Cell-Based Assay
ADA Assay	scFv	Developed a multi-antibody for scFv	Cell-Based Assay/ELISA

Application Strategy and Case Study of Anti-idiotypic Antibody

▶ Pharmacokinetic (PK) Typical Analytical Methods

	Antigen-trapping type	Anti-idiotypic antibody trapping type	Sandwich enzyme-linked immunosorbent assay
Schematic diagram of detection			
Solid phase coating	Target protein	Anti-idiotypic antibody	Anti-idiotypic antibody
Target	Antibody drug	Antibody drug	Antibody drug
Antibody detection	Anti-Fc secondary antibody	Anti-Fc secondary antibody	Anti-idiotypic antibody
Advantages	No need for additional development of anti-idiotypic antibodies. Simple and time-saving protocol	Only one anti-idiotypic antibody needs to be developed. Saving costs	High accuracy. Suitable for all types of biological drugs
Limitations	Low degree of stability and certainty	Average specificity, susceptible to matrix effects, only suitable for antibody drugs with Fc region	High development difficulty

Typical pharmacokinetic detection methods are mainly divided into the above three categories. The accuracy and stability of antigen capture detection method are low because of the large change of epitope exposed by antigen coating and poor antigen stability. Therefore, this method is only recommended for early exploratory experiments. Capture and sandwich enzyme-linked immunosorbent assay (ELISA) are common methods for clinical and preclinical pharmacokinetic analysis, which can be selected according to the type of drug and the development of anti-idiotypic antibody. In general, sandwich ELISA has the strongest specificity, the highest data accuracy, and can be applied to the detection of all types of biological drugs.

PK Assay Case Study

Testing method	Coated	Sample	Testing
Antigen capture ELISA	CD20	Antibodies to be tested	Goat anti-human IgG
Anti-idiotypic capture ELISA	Anti-Ritux*mab Antibodies	Antibodies to be tested	Goat anti-human IgG
Bridging ELISA by anti-idiotypic antibodies	Anti-Ritux*mab Antibodies	Antibodies to be tested	Biotinylated Anti-Ritux*mab Antibodies

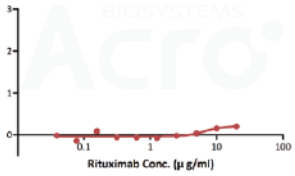


Figure1. Detection of Ritux*mab by antigen-capture ELISA (0.1% serum).

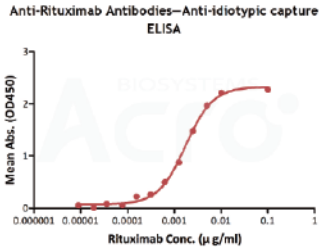


Figure2. Detection of Ritux*mab by anti-idiotypic capture ELISA (0.1% serum).

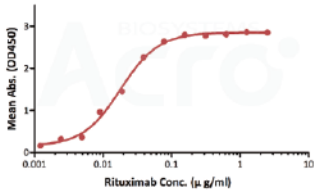
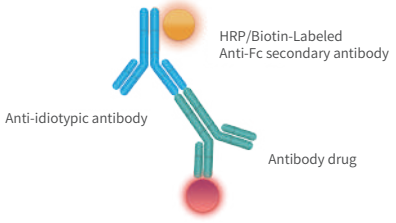
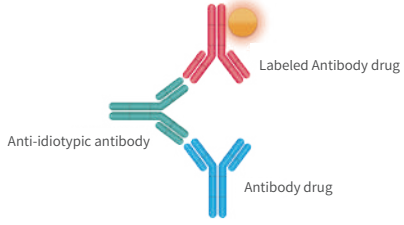


Figure3. Detection of Ritux*mab by anti-idiotypic bridging ELISA (10% serum).

Testing method	Linear range (μg/mL)	Sensitivity (μg/mL)	Advantage	Disadvantage
Antigen-capture ELISA	–	–	Simple method and good versatility	High background, no activity
Anti-idiotypic capture ELISA	0.156-10	0.156	Solve the difficulty in obtaining CD20, simple method	High background, only suitable for Rituxa biosimilar
Bridging ELISA by anti-idiotypic antibodies	0.012-0.78	0.012	Solve the difficulty in obtaining CD20, good sensitivity and low background	Only applicable to Rituxan biosimilar

▶ Typical Methods for Analysis of Immunogenicity (ADA)

	Antibody drug capture type	Bridge-type
Schematic diagram of detection		
Solid phase coating	Antibody drug	Antibody drug
Target	Anti-drug antibody	Anti-drug antibody
Antibody detection	Anti-Fc secondary antibody	Antibody drug
Advantage	Easy to develop	High accuracy
Limitations	Need to replace the detection antibody, accuracy is generally affected by the matrix. For testing animal serum only	Narrow linear range. Difficult to develop

There are two typical ELISA methods (antibody drug capture and bridging) for total anti-drug antibody to establish the standard curve. For the antibody drug capture method, it is necessary to change antibodies according to the Fc type of the substance, which will affect the accuracy of the data move to (usually used as a positive control). In general, the accuracy of the bridging ELISA method is higher, but the method establishment is relatively difficult.

Anti-Adalimumab Antibodies (ADB-Y19)

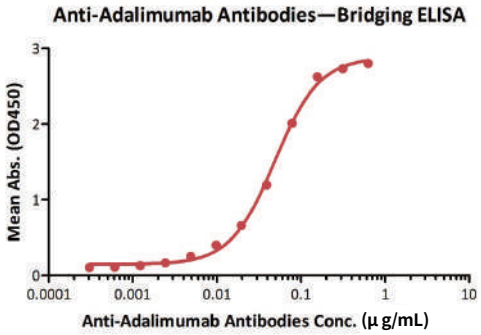


Figure 1. Anti-Adalimumab Antibodies bridging ELISA for Anti-Drug Antibody (ADA) assay development. *Immobilized adalimumab at 1 μg/ml, added increasing concentrations of Anti-Adalimumab Antibodies (Cat. No. ADB-Y19, 10% human serum) and then added biotinylated adalimumab at 5 μg/ml. Detection was performed using HRP-conjugated streptavidin with a sensitivity of 0.6 ng/mL.*

Anti-Rituximab Antibodies (RIB-Y35)

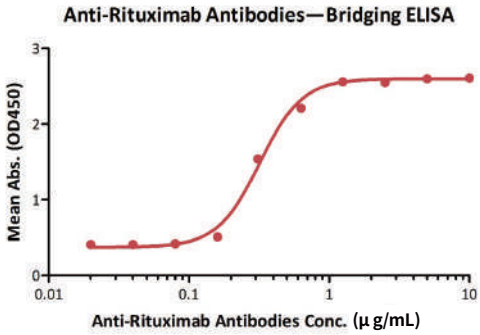


Figure 2. Anti-Rituximab Antibodies bridging ELISA for Anti-Drug Antibody (ADA) assay development. *Immobilized rituximab at 5 μg/ml, added increasing concentrations of Anti-Rituximab Antibodies (Cat. No. RIB-Y35, 10% human serum) and then added biotinylated rituximab at 5 μg/ml. Detection was performed using HRP-conjugated streptavidin with a sensitivity of 20 ng/mL.*

Guidance on Compliance of Anti-idiotypic Antibodies in IND Application and Clinical Use

Governing Bodies	Guidance Documents
FDA	Immunogenicity Testing of Therapeutic Protein Products — Developing and Validating Assays for Anti-Drug Antibody Detection Guidance, 2019.
EMA	Guideline on Immunogenicity Assessment of Biotechnology-derived Therapeutic proteins, 2016.
USP	Immunogenicity Assays-Design and Validation of Immunogenicity to Detect Anti-Drug Antibodies for a Broader Discussion of various Assay Types. *USP General Chapter 1106,2015.*
NMPA	Technical Guidelines for the Development and Evaluation of Biosimilar Drugs (Draft) General Principles for the Non-Clinical Safety of Therapeutic Biological Products
White Paper	Recent issues in bioanalysis: Focus on Biomarker Assay Validation (BAV): (Part 3-LBA, Biomarkers and Immunogenicity). *Bioanalysis, 2016.*

Refer 'Requirements for Drug Records and Data Management (Trial)' for guidance on compliance

Data management:

Improve the operation procedures and management system to standardize the production process data records and review requirements. The measuring instruments that produce data shall be checked and verified periodically to ensure the reliability of the data.

The original data is backed up according to data management requirements.

Records Management:

A complete protocol document and experimental record forms.

Perfect documentation quality management system, including documents and records approval and review, printing and issuance, record requirements, archiving, copying and destruction and other processes. Perfect electronic record management system, including regular inspection of computerized systems, time and time zone management, system data backup, operation authority and user rights management.

Kit Development Strategies and Reference Materials

▶ Development of Pharmacokinetic Test Kits

The development of the kit can be carried out after the selection of pharmacokinetics methods.

First, a pre-development feasibility study is required, including antibody labeling, antibody pairing and confirmation, initial establishment of standard curves, matrix validation and initial sensitivity experiments. For sandwich ELISA, it is suggested that multiple pairs of antibodies should be screened during the discovery phase of anti-idiotypic antibodies, and the best pairs should be selected for methodology development to ensure the success of kit development. Different standards for matrix validation and sensitivity should be set according to the characteristics of different samples, and customized design should be carried out.

>>> Summary of Reference Regulations or Guidelines

'Guidelines for the Validation of Quantitative Methods for Biological Samples'

'Bioanalytical Method Validation Guidance for Industry'

'Technical Guidelines for Clinical Pharmacokinetics of Therapeutic Protein Drugs (Draft)'

'GB/T 33411-2016 General Principles for ELISA Kits'

▶ Development of Immunogenicity Test Kits

After the selection of immunoassay methods, the development of the kit can be carried out.

Like the pharmacokinetic kit development process, immunogenicity kit development includes pre-development feasibility studies (antibody labeling, initial establishment of antibody standard curves, matrix validation, and initial sensitivity testing), optimize the reaction conditions and parameters, determining the standard curve, and testing the performance of the kit, and finally produce the kit.

Similarly, matrix validation and sensitivity should be customized according to the characteristics of different samples.

For developed kits, again, the kit should be validated in a suitable laboratory setting in accordance with the guidelines listed below. Validation should be performed before clinical samples are tested.

>>> Summary of Reference Regulations or Guidelines

'GB/T 33411-2016 General rules for enzyme-linked immunoassay kits'

'YY / T1183-2010 ELISA Kit'

'Technical Guidelines for Drug Immunogenicity Research'

'Immunogenicity Testing of Therapeutic Protein Products-Developing and Validating Assays for Anti-Drug Antibody Detection'

About Us

ACROBiosystems is a global leading manufacturer of recombinant proteins and other critical reagents to advance and accelerate the development of target therapeutics, vaccines, and diagnostics. The company is listed on the Shenzhen Stock Exchange and enjoys long-term partnerships with the world's Top 20 pharmaceutical companies.

The company employs an application-oriented development strategy, with a particular focus on product design, quality control and solution-based support. The firm's products and services enable anyone in the field of drug development to have a more intuitive and streamlined process. The company is determined to become a cornerstone enterprise in the field of biomedical and health industry.

Our Clients

Pharma | Biotech | Diagnostics | Vaccine | CXO | Academia

> 6,000 Customers

> 70 Countries

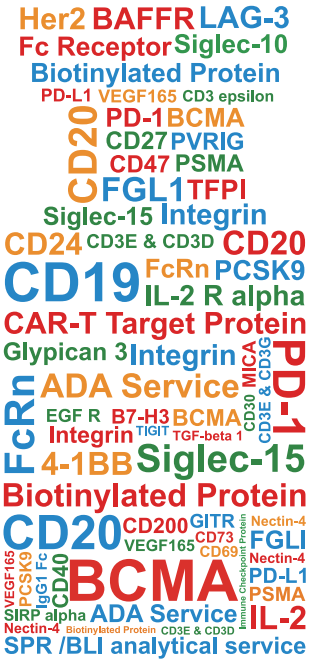
> 100,000 Scientists

People's Republic of China
Tel: +86 400-682-2521
www.acrobiosystems.com
order.cn@acrobiosystems.com
4th Floor, Building 5, No. 8, Hongda North Road, Beijing Economic and Technological Development Zone

United States
Tel: +1 800-810-0816
www.acrobiosystems.com
order@acrobiosystems.com
1 Innovation Way, Newark, DE 19711

CERTIFIED ISO 9001:2015 CERTIFIED ISO 13485:2016

AS-CN03E01-OPE-20210702



Professional Exhibition Materials Download | Hot Product Event Launch | Exclusive Technical Tips

Further Inquiries

ACROBiosystems can provide you with customized inspection

1. Negotiation
2. Contracts signed
3. Preparation of anti-idiotypic antibodies
4. Product delivery
5. Project completion archiving

Scan for Inquiry

ACROBiosystems INC.
North America: +1302-766-0429
Asia & Pacific: +86 400-682-2521
Email: services@acrobiosystems.com