Monoclonal antibody drug integrated service

→ Fully human mAb

Human Combo Library Campaign

Phage display and antibody expression 8-10 weeks

In vivo efficacy & preliminary developability assessment 9-13 weeks

Total 6-9 months

Single B Cell Campaign

immunization 6-8 weeks

In vitro assay 3-4 weeks

In vivo efficacy & preliminary developability assessment 9-13 weeks

In vivo efficacy

Total 7-10 months

Hybridoma Campaign

Animal immunization 6-8 weeks

In vitro assay

& preliminary developability assessment 9-13 weeks

Total 8-11 months

Total

7-11

months

Humanized mAb

Single B Cell Campaign

Animal mmunization 6-8 weeks

Single B cel screening and antibody expression 4-5 weeks

3-4 weeks

n vivo efficacy & preliminary developability assessment 9-13 weeks

Hybridoma Campaign

Animal mmunization 6-8 weeks

Hybridoma screening and antibod expression 11-13 weeks

In vivo efficacy & preliminary developability assessment 9-13 weeks

Total 9-13 months

In vitro and in vivo method development can be performed in parallel with antibody lead generation and developability assessment, saving 7 months for the project.

Single B Cell Campaign

- 100+ antibody discovery projects
- High affinity (up to 10pM)
- · Acquire functional antibody sequences as soon as 1 month

Hybridoma Campaign

- 500+ antibody discovery projects
- High affinity (up to 10pM)
- · Cost-effective service

Human Combo Library Campaign

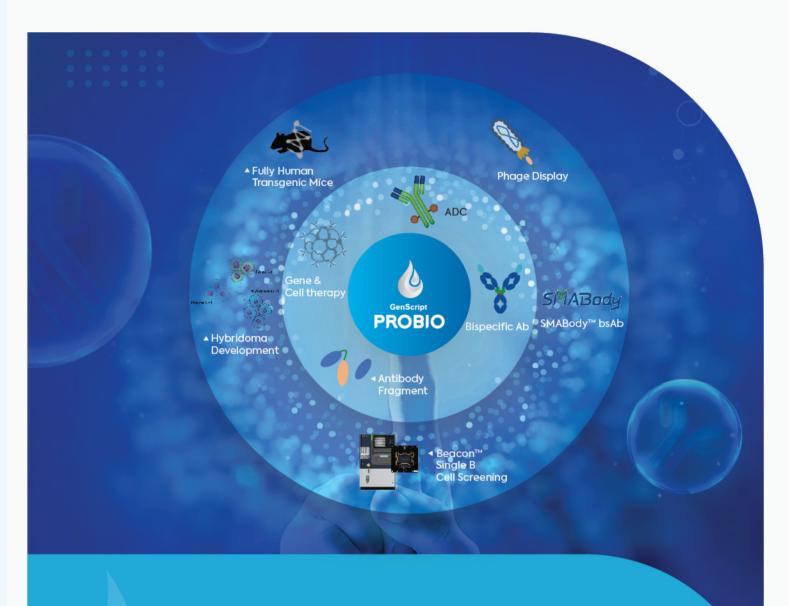
- Two library(human synthetic & naïve) screen together
- · Acquire functional antibody sequences as soon as 1 month
- · No license fee



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GenScript ProBio Integrated Discovery Service

- From Target to Preclinical Candidates(PCC)
- Multiple Lead Generation Campaigns In Parallel To Increase PCC **Success Rate**
- Saving 7 months for In vitro and In vivo Assay Development

Integrated Discovery Services Overview

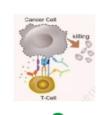
GenScript ProBio provides end-to-end CDMO service from drug discovery to commercialization with proactive strategies, professional solutions and efficient processes.

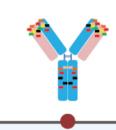
ProBio's integrated service for biologics discovery include antibody generation (hybridoma, phase display, single B cell, fully human antibody, SMAbody™ bispecific antibody), antibody engineering(antibody humanization and affinity maturation, developability assessment)and pharmacology (in vitro bioassay, in vivo validation).

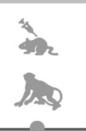
Integrated Discovery Service











Target discovery

Target discovery Target validation Project planning and development

generation

To generate leads using approaches including hybridoma, phage display, single B cell

Lead

In vitro bioassay

To ensure antibody activity of the best lead through a series of cell-based in vitro bioassay

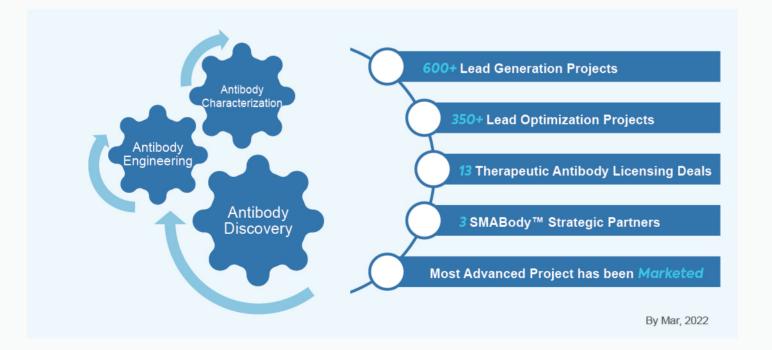
Antibody engineering

To improve the developability through humanization and/or other engineering approach

In vivo validation

To evaluate the antibody candidates efficacy/safety in animals model

Fast-Growing Global Track Records



GenScript ProBio's Advantages



Time saving in 7 months

- · Save the time for pharmoclogy method development
- · Save the time for material transfer
- · Save the time for international shipping between vendors



Target discovery

- From target to PCC
- · Provide customized services based on target MOA and indications



Multi-campaigns for sdAb and mAb

- 2 lead generation campaigns for sdAb
- 3 lead generation campaigns for mAb
- Multiple lead generation campaigns in parallel to increase PCC success rate



Well-established pharmacology platform

- 12 types of in vitro assay are available
- Read-to-use functional assays for 30+ popular
- 6 major types of in vivo animal models
- Customized PK/PD biomarker analysis platform



Excellent project management team

- 10+ integrated service delivered
- Over 90% project manager with PMP
- 24-hour rapid response



Flexible business model

- Charged by milestone or delivered PCC number

Multiple lead generation campaigns to obtain high-quality preclinical antibody candidates

Single Domain Antibody Discovery Integrated Service

Naïve Library Campaign

Phage display and antibody expression 5-7 weeks

In vitro assay 3-4 weeks

In vivo efficacy & preliminary developability assessment 9-13 weeks

Total 6-10 Months

Immunized Library Campaign

Animal immunization 6-8 weeks

Library construction and antibody expression 7-10 weeks

ı vitro assay

In vivo efficacy & preliminary developabilit assessment 9-13 weeks

Total 8-12 Months

Immunized Library: Using non-immunized alpaca for each project, high affinity (up to 10pM), suitable for tumor associated antigen and

Naïve Library: 300 alpaca donors, capacity 2×10¹¹, obtained humanized Ab within 7 weeks, suitable for co-stimulatory immune checkpoint.

INTEGRATED DISCOVERY SERVICE INTEGRATED DISCOVERY SERVICE