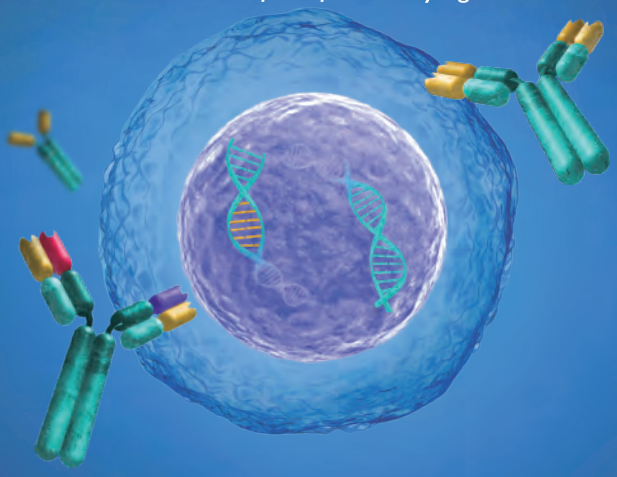
百奥赛图 BIOCYTOGEN

RenMab

An Innovative Platform from Biocytogen



The RenMice® Family

Biocytogen uses its proprietary RenMab™, RenLite® and RenNano® mouse platforms for fully human monoclonal, bispecific/ multispecific antibody and nanobody discovery.

RenMice® Family

RenMab™

Best-in-class fully human antibody platform

Full human heavy chain and kappa light chain V(D)J loci substitution

Available for partnership

RenLite®

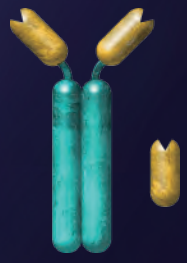
Bispecific/multispecific antibody discovery platform

Full human heavy chain repertoire combined with a common light chain substitution

Available for partnership

RenNano®

Heavy chain only antibody (HCAb) & Nanobody platform



Fully human heavy chain V(D)J loci substitution with modified constant regions

Available for partnership

Partnership

Licensing Options

License directly with Biocytogen Option to use through other CROs or in-house

Co-development Opportunities

Exclusive partnership opportunities using the RenMice® HiTS Platform

Flexibility

Flexible terms tailored to accomodate different antibody programs

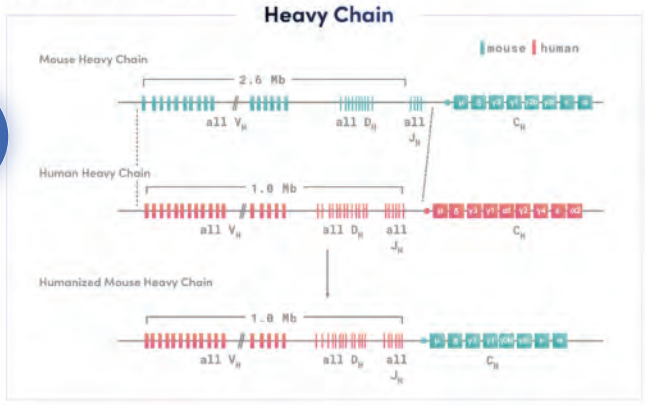
www.renmab.com | BD-Licensing@biocytogen.com

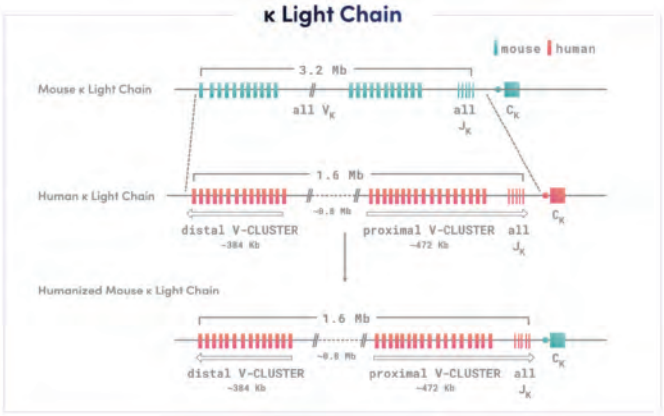
Key Features of RenMab™

- Full human heavy chain and kappa light chain V(D)J loci substitution in situ.
- Exhibit human-like CDR features and repertoire diversity.
- Robust immune response comparable to wild type mice.
- High binding affinity at subnanomolar range.

Schematic of humanization in RenMab™ mouse

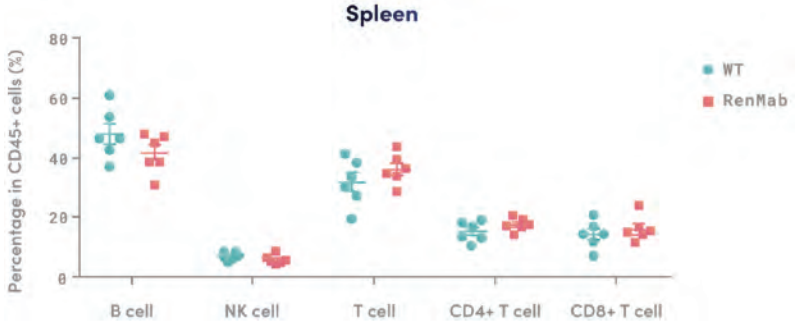
- Whole mouse variable regions of the heavy and k light chains are replaced by full human heavy chain VDJ segment and light chain VJ loci *in situ*.

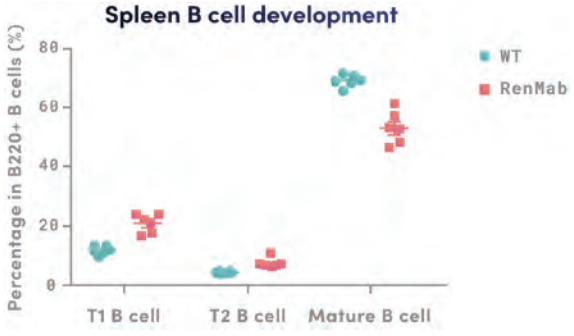


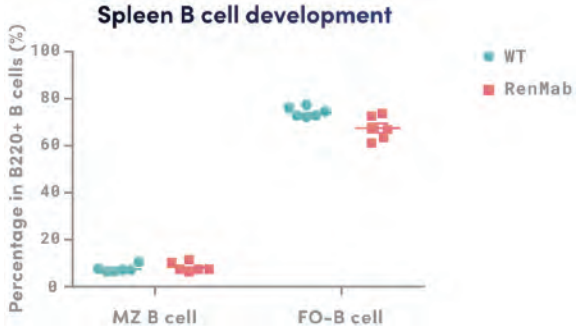


Validation Data

RenMab™ mouse immune cell profiling suggests a comparable immune system to wild type mouse.



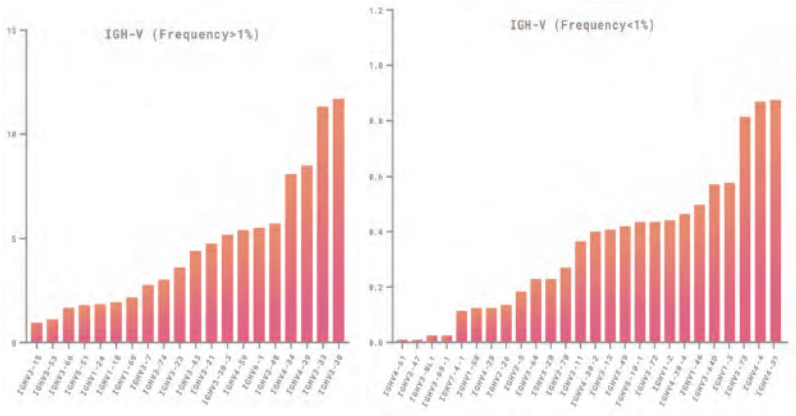




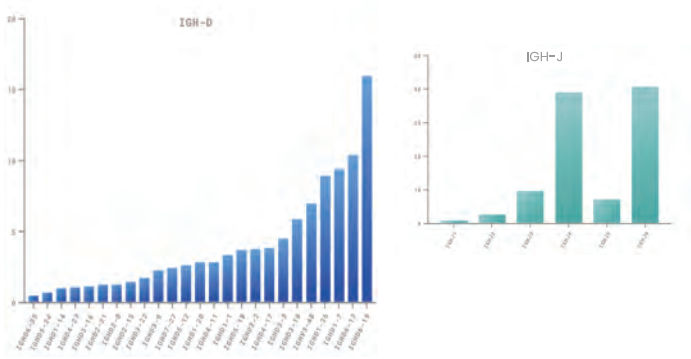
RenMab™

IGHV, IGHD and IGHJ germline usage of naïve RenMab™ mice

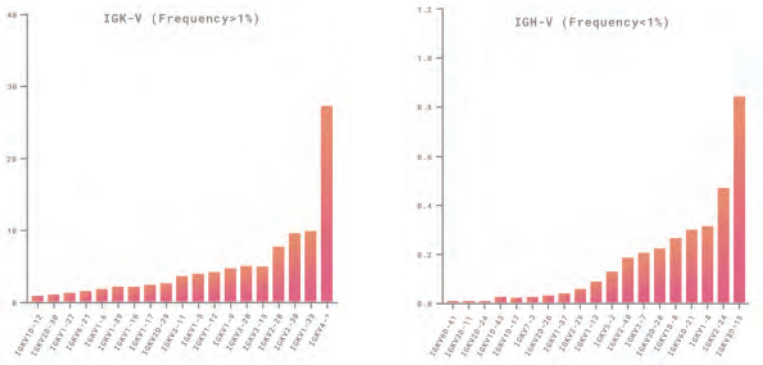
A. RenMab™ Naïve Mouse Heavy Chain IGHV Germline Usage



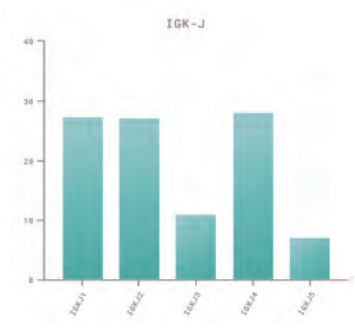
B. RenMab™ Naïve Mouse Heavy Chain IGHD & IGHJ Germline Usage



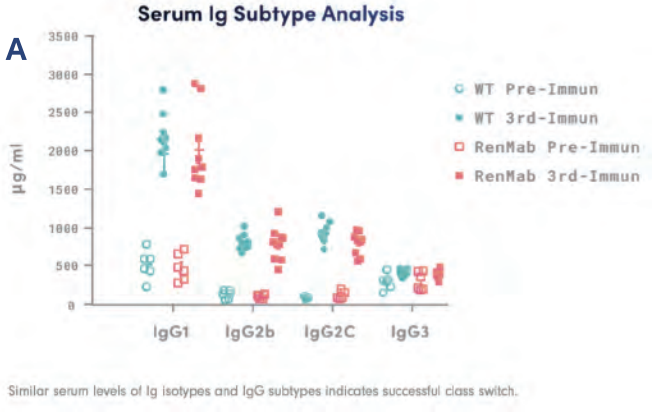
C. RenMab™ Naïve Mouse Kappa Light Chain IGKV Germline Usage

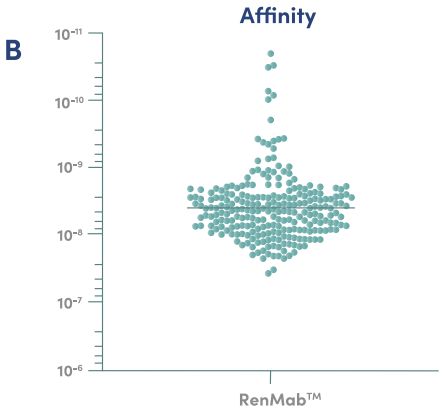


D. RenMab™ Naïve Mouse Kappa Light Chain IGKJ Germline Usage



RenMab™ mice exhibit robust immune response and generate fully human antibodies with high affinity





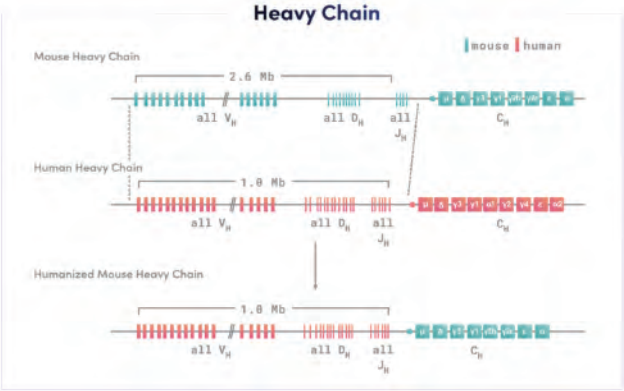
A. No significant differences in serum level of IgG subtypes were observed in RenMab™ mice versus wildtype C57BL/6 mice before and after immunization.
B. Affinity range (geometric mean of KD (M) shown) of RenMab™ generated antibodies for a particular campaign, which includes a number high affinity clones.

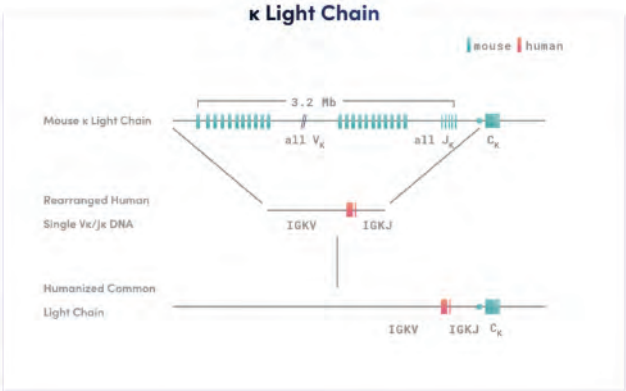
Key Features of RenLite®

- **Common single human light chain designed for bispecific or multispecific antibody discovery**
- **Robust immune response comparable to wild type mice.**
- **Diversified heavy chain repertoire similar to that of humans.**
- **High binding affinity at subnanomolar range.**

Schematic of humanization in RenLite® mouse

- Heavy chain: whole mouse heavy chain VDJ genes were replaced with full human heavy chain VDJ loci *in situ*.
- Light chain: whole mouse light chain VJ loci was replaced with single human KV and KJ gene *in situ*.

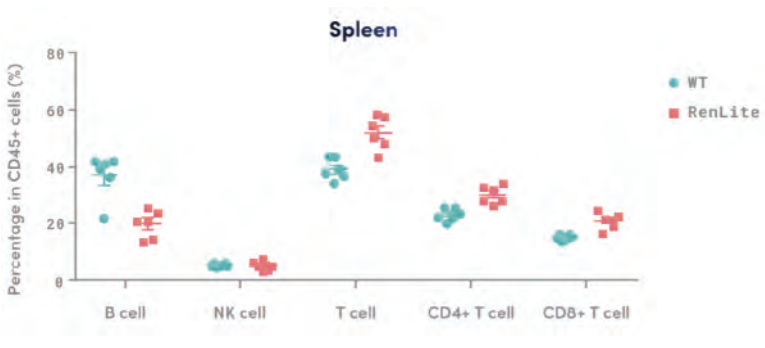




Validation Data

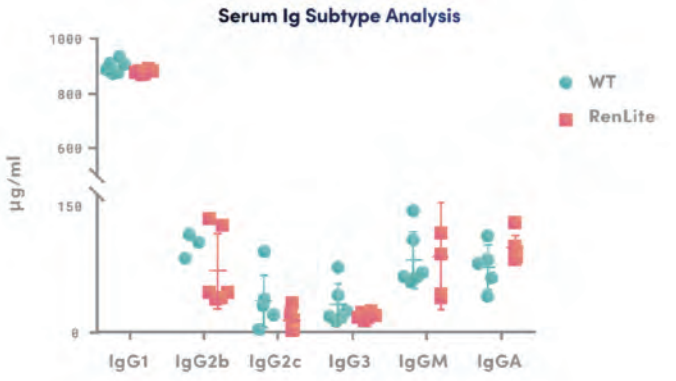
RenLite® mouse shows similar immune profile as wild type mouse

A. Comparison of immune cell population in spleen between RenLite® and wild type mice



- The percentage of B cells in the spleen of RenLite® mice is slightly lower than wild type mice. This is mainly due to the limited light chain choice during the B cell maturation. When the heavy chain does not pair with fixed light chain efficiently, the B cells do not mature properly.

B. Serum immunoglobulin isotype and IgG subtype analysis



- Serum concentrations of IgA, IgM and IgG subtypes of RenLite® and wild type mice were measured by ELISA. Sera were equally diluted between two groups of mice.

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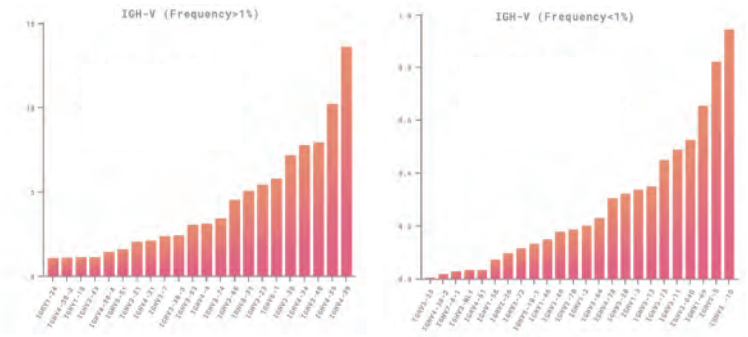
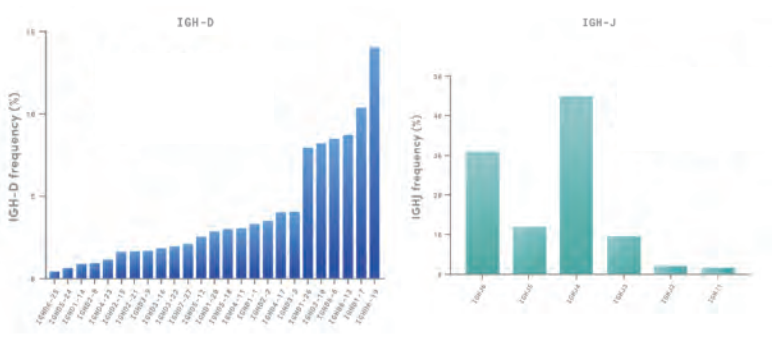
RenLite®

Heavy chain IGHV, IGHD and IGHJ germline usage of naïve RenLite® mice

A. Heavy chain IGHV germline usage of naïve RenLite® mouse

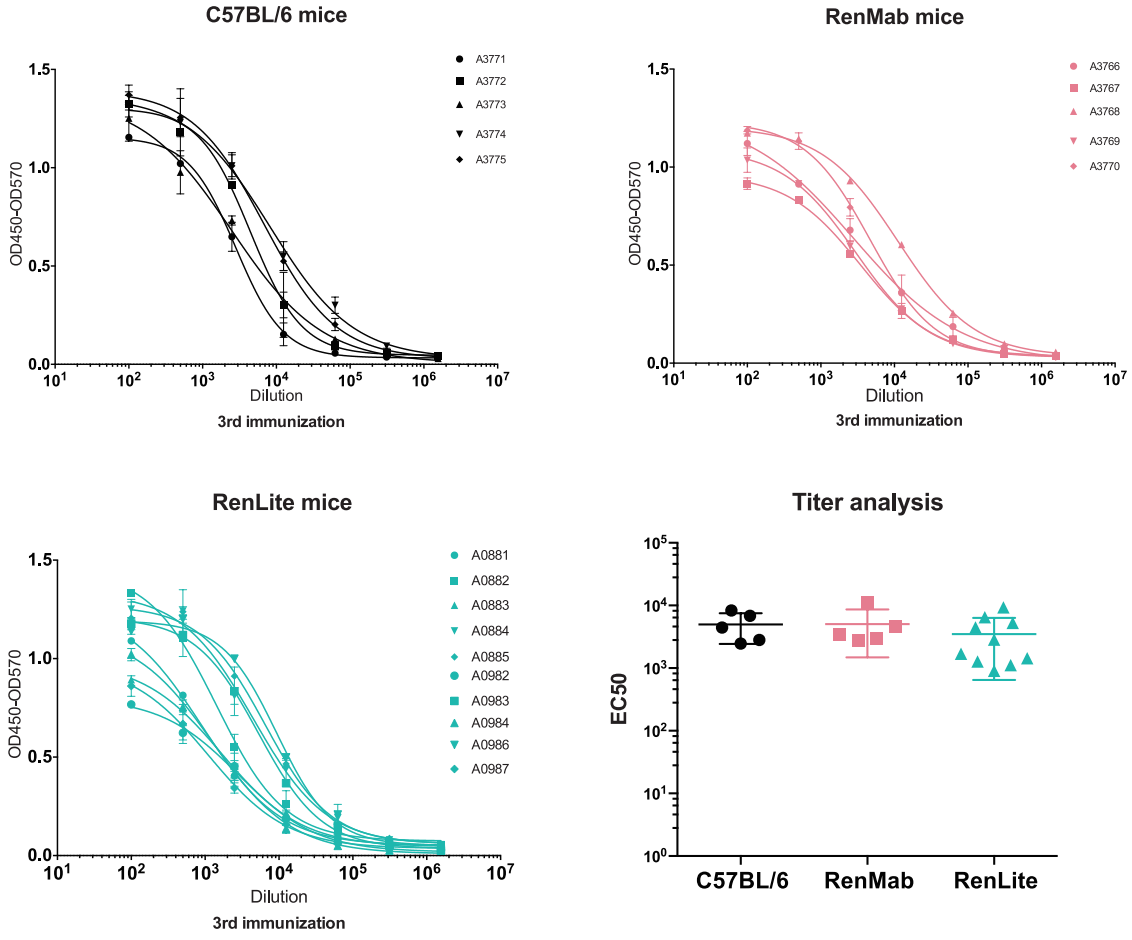


B. Heavy chain IGHD & IGHJ germline usage of naïve RenLite® mouse



RenMice® Case Studies

Robust titers are generated in both RenLite® and RenMab™ mice



20 mice (5 C57BL/6, 5 RenMab™, 5 RenLite®) were immunized with the same antigen. Titers were measured after the third immunization. EC50 analyses were similar across the strains, with a broader range observed in RenLite® mice.

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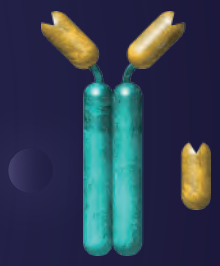
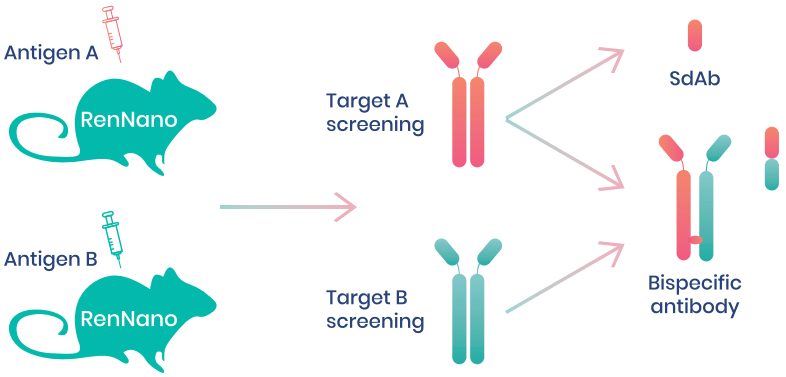
RenNano®

Heavy chain only antibody (HCAb) & nanobody discovery platform

Fully human heavy chain VDJ loci substitution with modified constant regions



Advantages

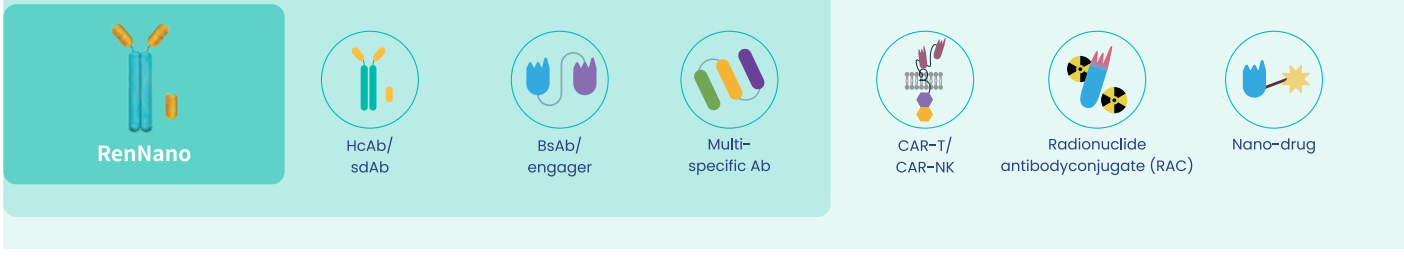


- Recognizing hidden epitopes
- Good hydrophilicity and penetration ability
- Robust immune response
- Diversified heavy chain repertoire
- High binding affinity at nanomolar range

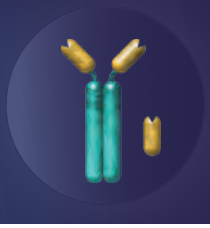
Nano 100 Project

The "Nano 100 Project" aims to develop fully human nanobody drugs using RenNano mice for more than 100 targets, including tumor associated antigens (TAAs), GPCRs, immune-checkpoints, cytokines, and factors related to neurological diseases.

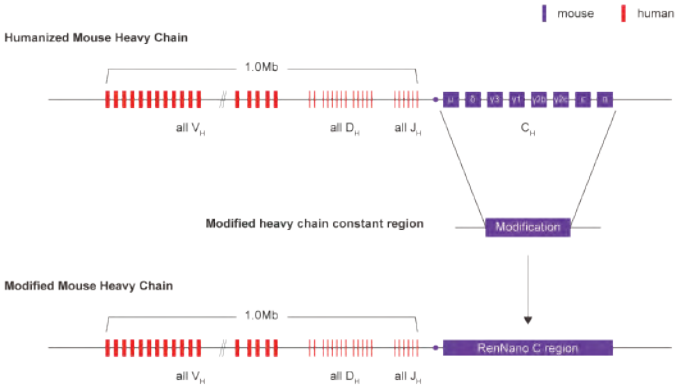
Nano 100



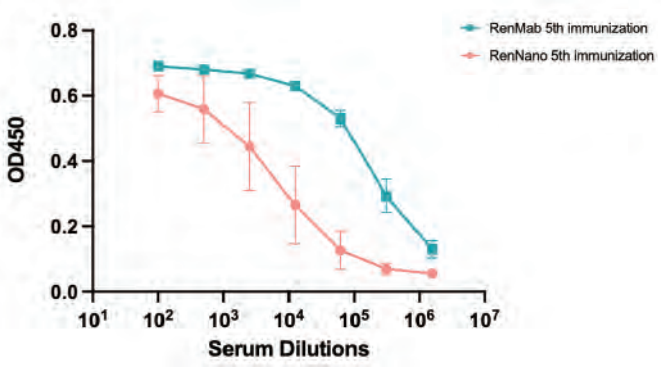
RenNano®: Full human nanobody mouse



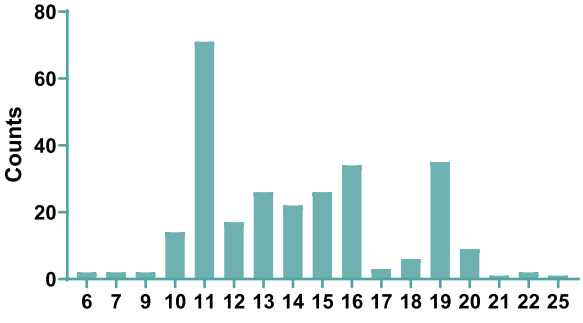
Full human heavy chain variable regions and modified constant regions



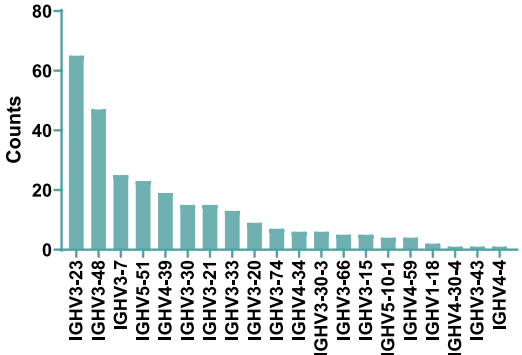
Immune response compared with RenMab mouse



Antigen-specific antibodies discovered from RenNano are highly diverse

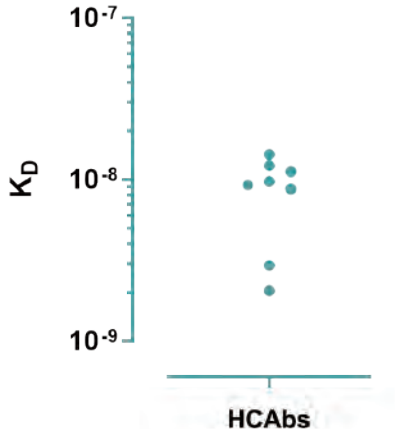


CDR3 length



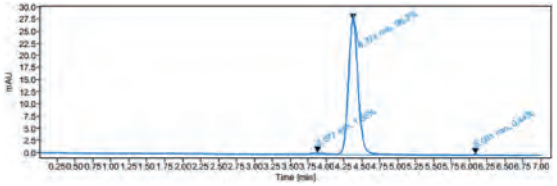
Germline gene usage

RenNano-derived HCAbs exhibit high binding affinity at nanomolar range



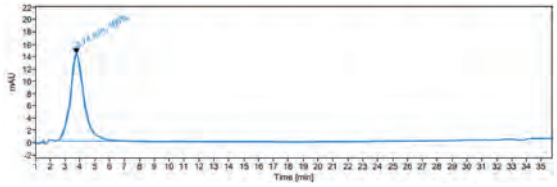
RenNano-derived HCAbs exhibit good developability characteristics

SEC-HPLC



High purity after one-step purification

HIC-HPLC



Superb hydrophily of RenNano HCAbs

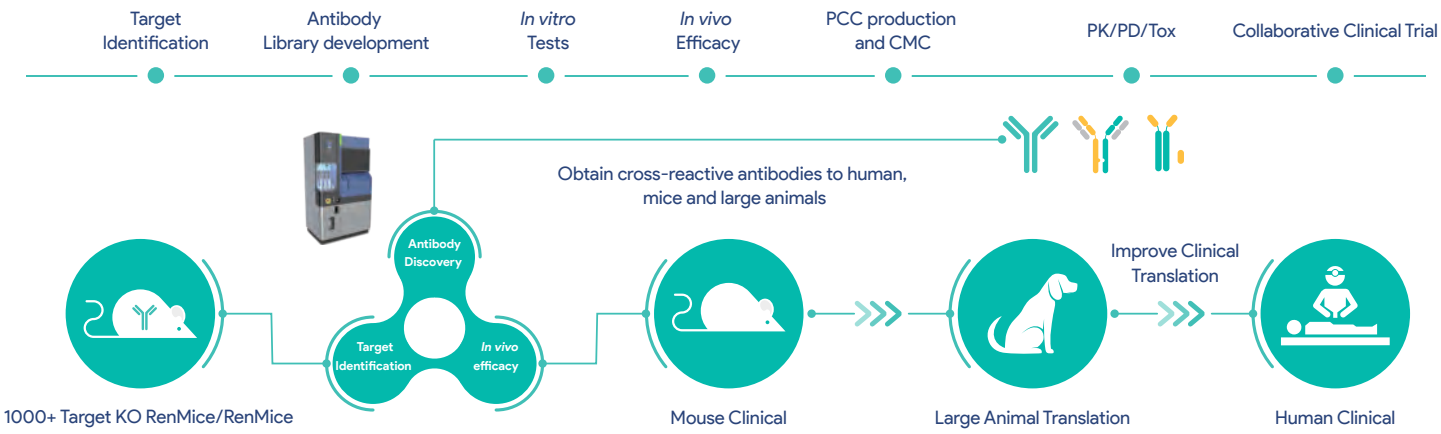
Project Integrum

A large-scale fully human antibody drug development project for 1000+ potential drug targets using target knockout RenMice/RenMice.

Hundreds of thousands of antibodies for different antibody therapeutic modalities

RenMab™	RenLite®	RenLite®	RenNano®	RenTCR™	RenTCR-mimic™	RenMice® KO
mAb platform	BsAb platform	BsADC platform	Nanobody platform	TCR platform	TCR-mimic platform	GPCR platform

Workflow of Project Integrum



Progress of Project Integrum

400k - 500k	900+	30+	50
Fully-human antibody sequences	Target antibody discovery projects	PCC	Partnerships

About Biocytogen

Biocytogen (02315.HK) is a global biotechnology company that drives the research and development of novel antibody-based drugs with innovative technologies.

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