



High-Specificity OmniAb Antibodies for Bispecific Applications

13th World Bispecific Summit, Boston

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VP of Antibody Technologies

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The OmniAb Technology Suite

OmniAb®

OmniRat®

OmniMouse®

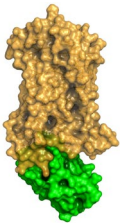
OmniChicken®

OmniTaur™

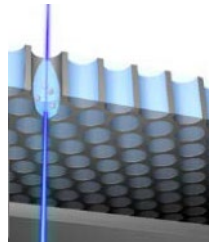
OmniFlic®

OmniClic®

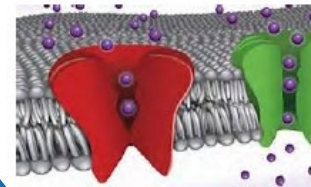
Ab Initio
Biotherapeutics



xCella®
BIOSCIENCES



ICAGEN®
ION CHANNEL TECHNOLOGY



The only platform
leveraging **four-species**

Robust solutions for
bispecific antibodies

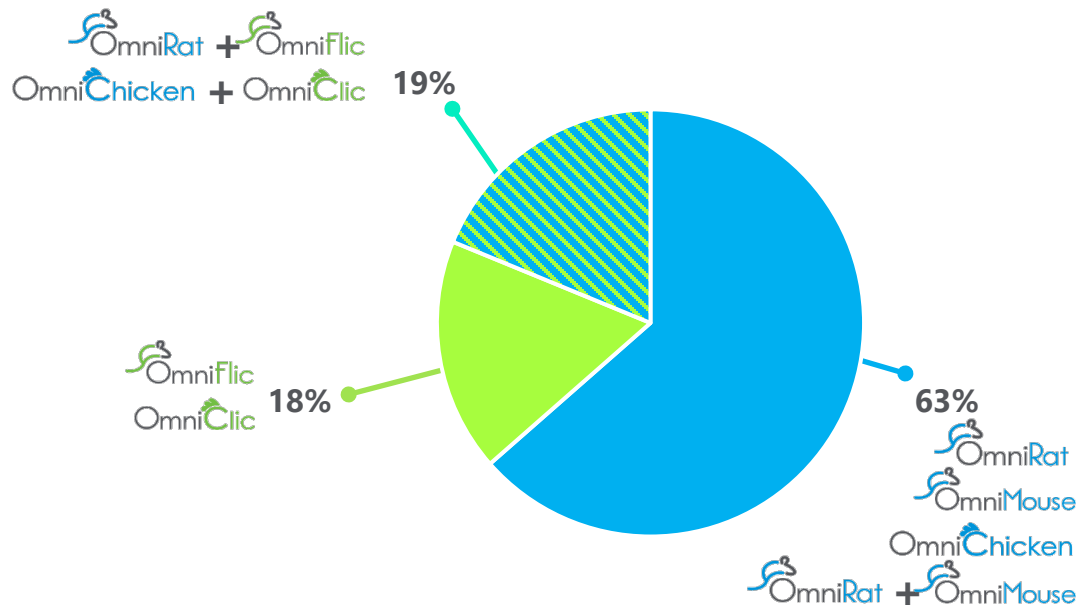
Human frameworks with
ultralong CDR-H3s

Industry's **most diverse offering**

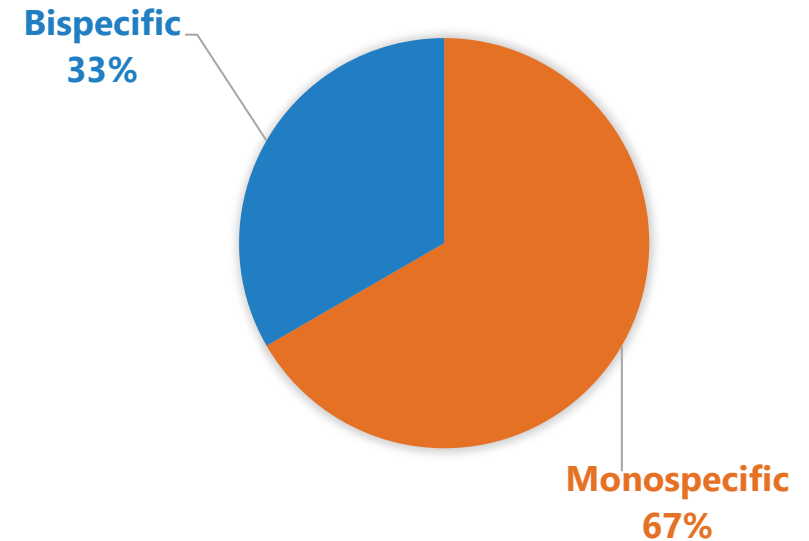
Proven success

Antibody Repertoires and Bispecific Antibodies

ACTIVE PROGRAMS



CLINICAL PROGRAMS














Combining sources provides partners even more diverse repertoires and new target access

Common light chain techs being used for flexibility and bispecific program optionality

Approved and Clinical Partner Bispecific Pipeline

ONE APPROVED PRODUCT AND 10 ACTIVE CLINICAL OMNIAB-DERIVED ANTIBODIES

Partner	Program	Source Animal	Area	Targets
	TECVAYLI®	OmniRat	Oncology	BCMA x CD3
	GEN1046	OmniRat	Oncology	PD-L1 x 4-1BB
	APVO436	OmniMouse	Oncology	CD123 x CD3
	JNJ-67371244	OmniMouse	Oncology	CD33 x CD3
	JNJ-70218902	OmniRat	Oncology	Undisclosed
	JNJ-78306358	OmniRat	Oncology	HLA-G x CD3
	GEN1047	OmniRat	Oncology	B7H4 x CD3
	TNB-383B	OmniFlic	Oncology	BCMA x CD3
	TNB-486	OmniFlic	Oncology	CD19 x CD3
	AMG 340	OmniFlic	Oncology	PSMA x CD3
	Undisclosed	OmniChicken	Undisclosed	Undisclosed

† Programs discovered by Teneobio

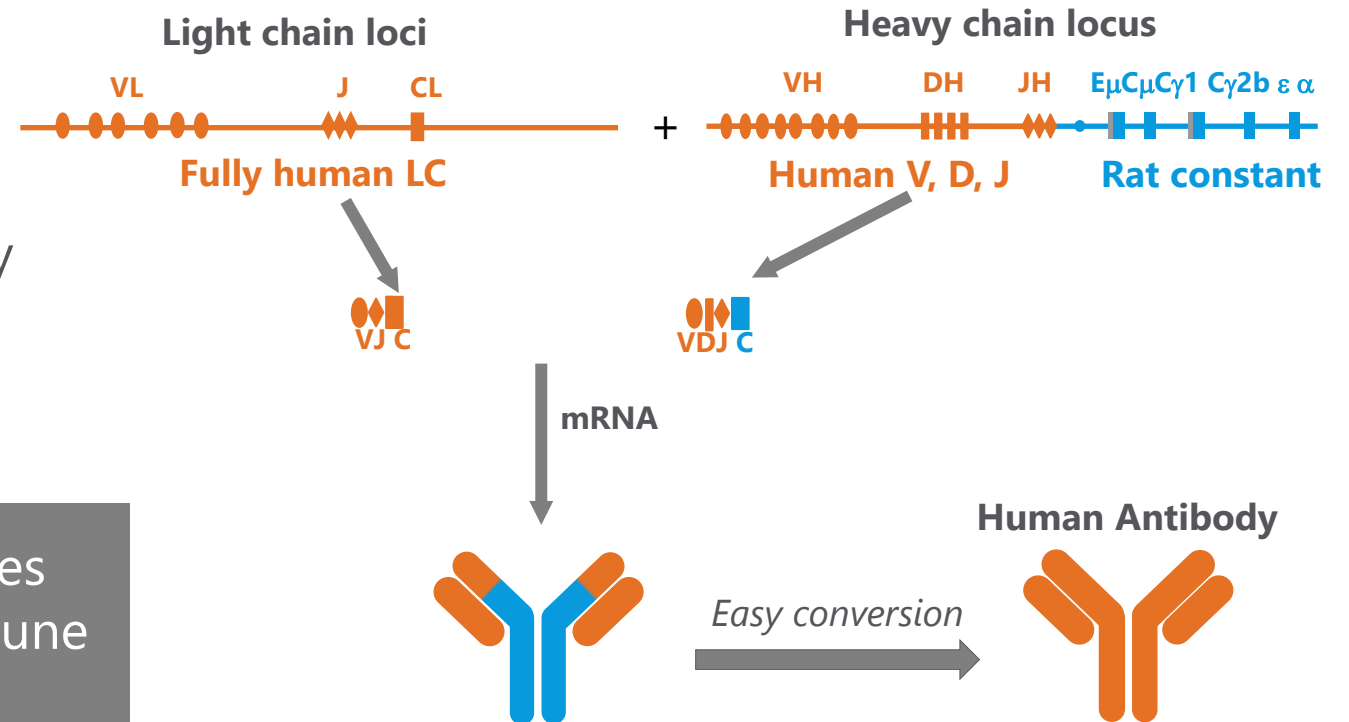
TECVAYLI® granted conditional marketing authorization (CMA) by the EMA [Janssen Marks First Approval Worldwide for TECVAYLI® \(teclistamab\) with EC Authorisation of First-in-Class Bispecific Antibody for the Treatment of Patients with Multiple Myeloma | Johnson & Johnson \(jnj.com\)](#)

Rodent Platforms



- Endogenous Ig genes inactivated
- Expression of full human V gene diversity
- Streamlined conversion into fully human molecule

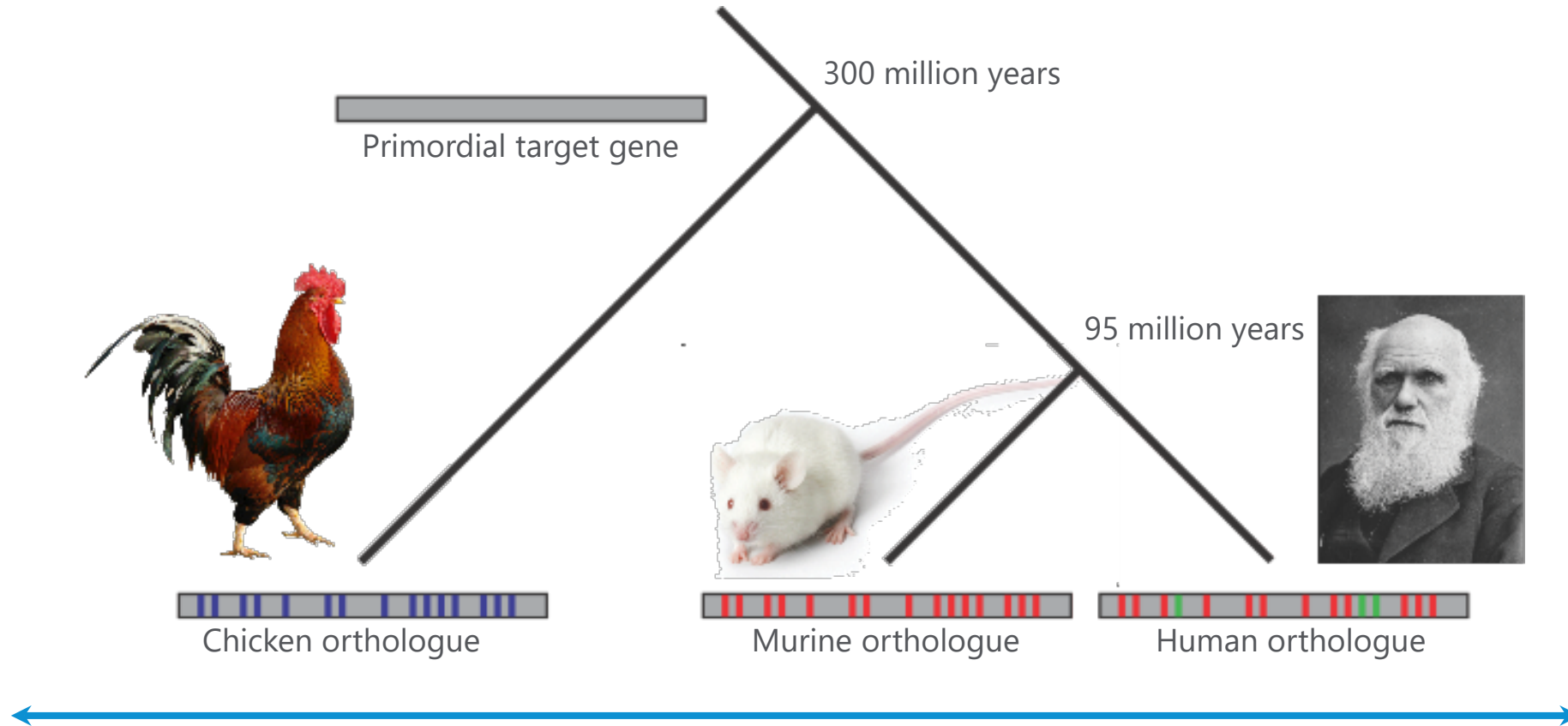
Well-validated transgene design utilizes rodent constant regions for robust immune responses from the B-cell repertoire



OmniChicken Platform

POWERED BY EVOLUTION

OmniChicken



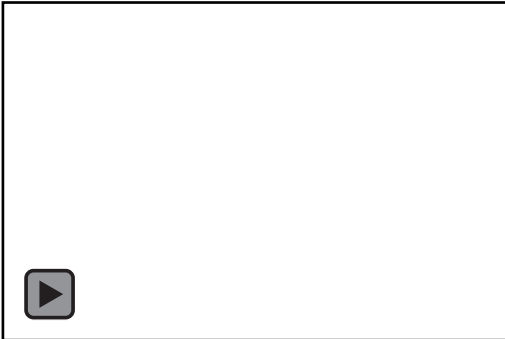
Greater evolutionary distance yields greater immunogenicity and more antibody diversity

Engineering of Ig Loci

ADAPTATION TO CHICKEN GENE CONVERSION PROCESS

OmniChicken

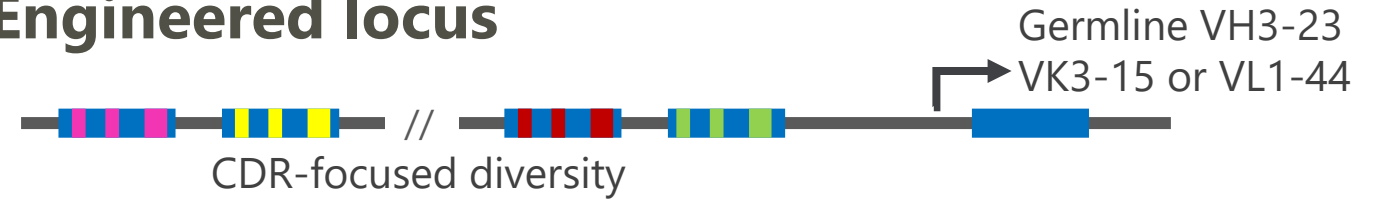
Gene conversion



Human V's selected for:

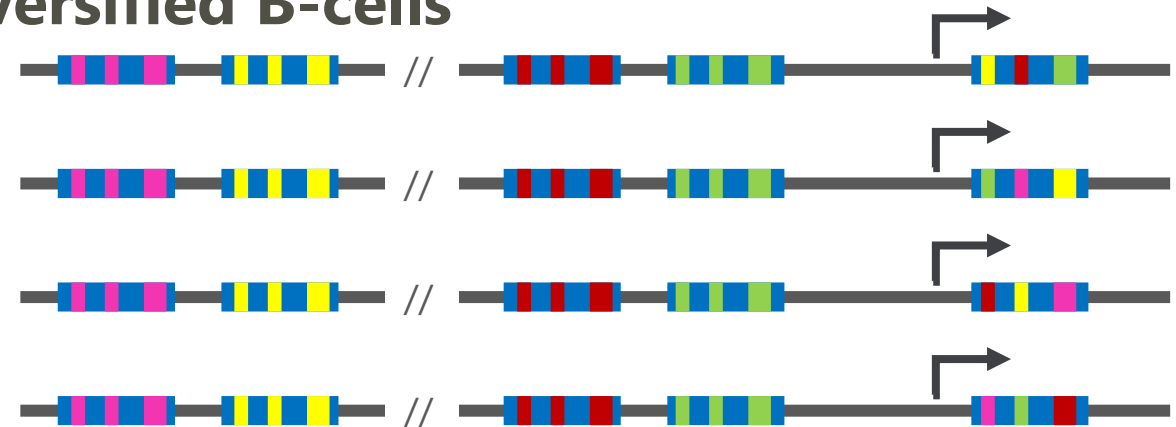
- High expression level, stability, ubiquity
- High sequence diversity in CDRs
- Low sequence diversity in FWs

Engineered locus



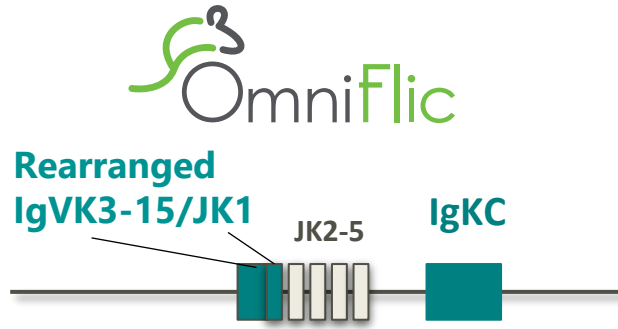
Gene conversion

Diversified B-cells

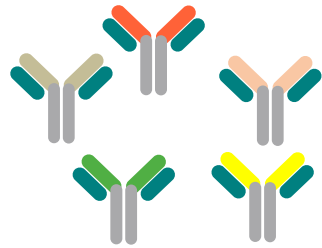


Common Light Chain Platforms

STANDARD IGG FORMAT TO DE-RISK DOWNSTREAM DEVELOPMENT[†] OF BISPECIFIC MABS



Rearranged human VK3-15 light chain combined with diversifying heavy chain



Simple reformatting from monospecific into bispecific for efficient production



Bispecific IgG



"Germlining" human VK3-15 light chain combined with diversifying heavy chain

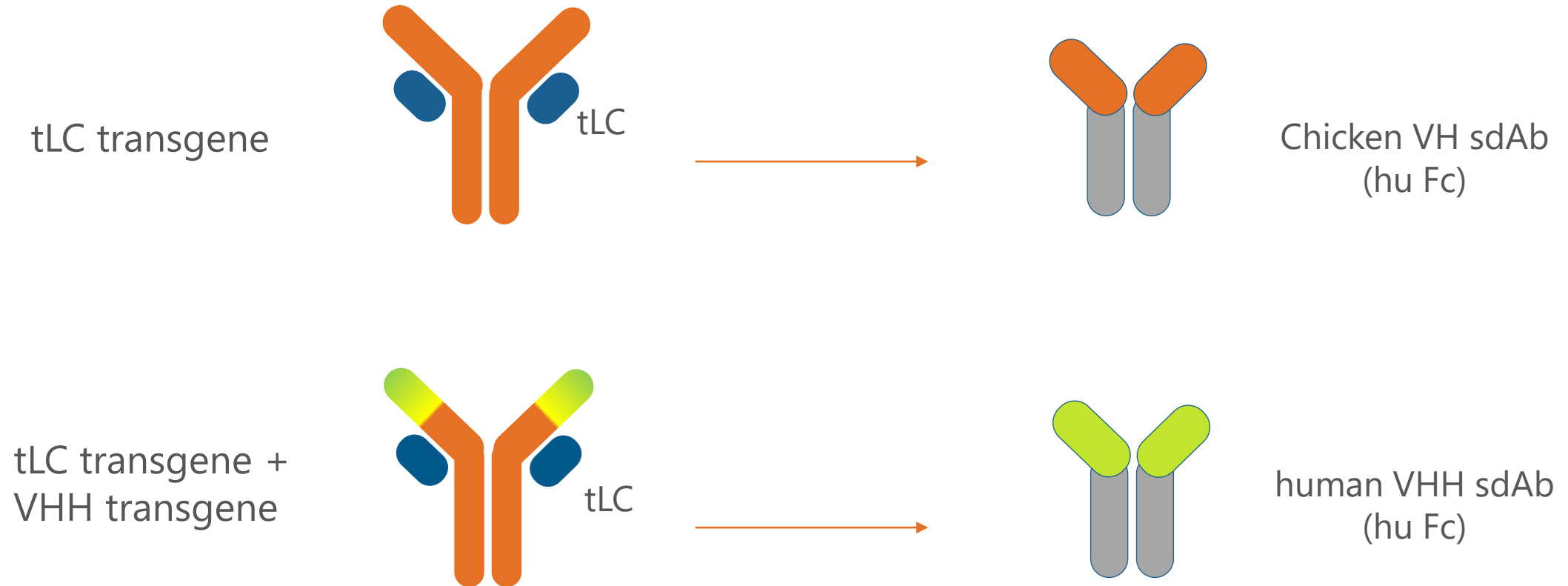


Monospecific IgG

Common light chain for OmniFlic and OmniClic allows interchangeability between the platforms

OmnidAb™: Heavy Chain Only Transgenic Chickens

HCO STRATEGY USING TRUNCATED LIGHT CHAIN (TLC)

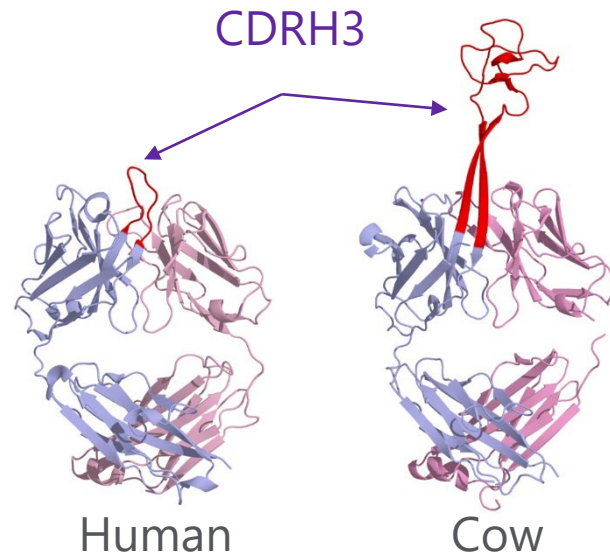


- Normal chicken heavy chain can express as VH alone
- VHH transgene in development

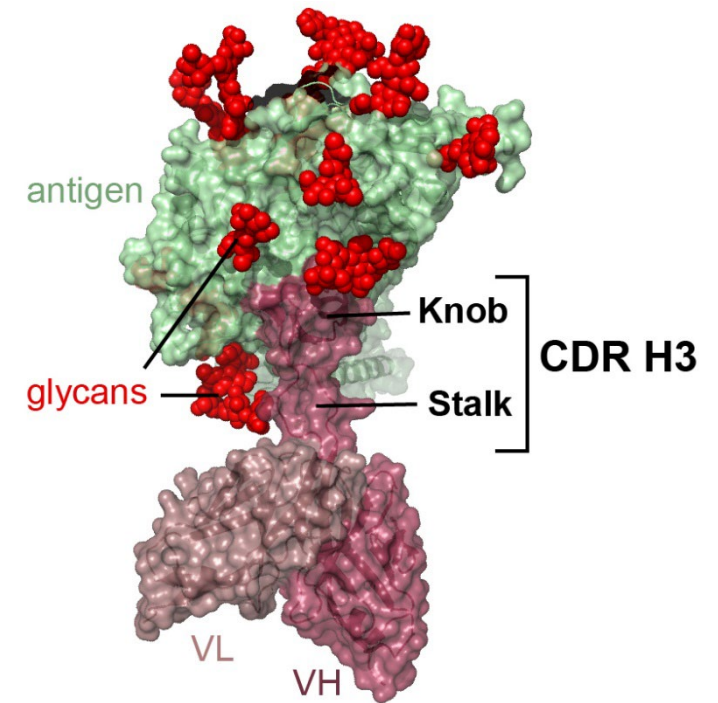
Ultralong CDRH3s Create Novel Binding Domains

UNIQUE STRUCTURAL FEATURES OF ULTRALONG H3 ANTIBODIES

OmniTaur

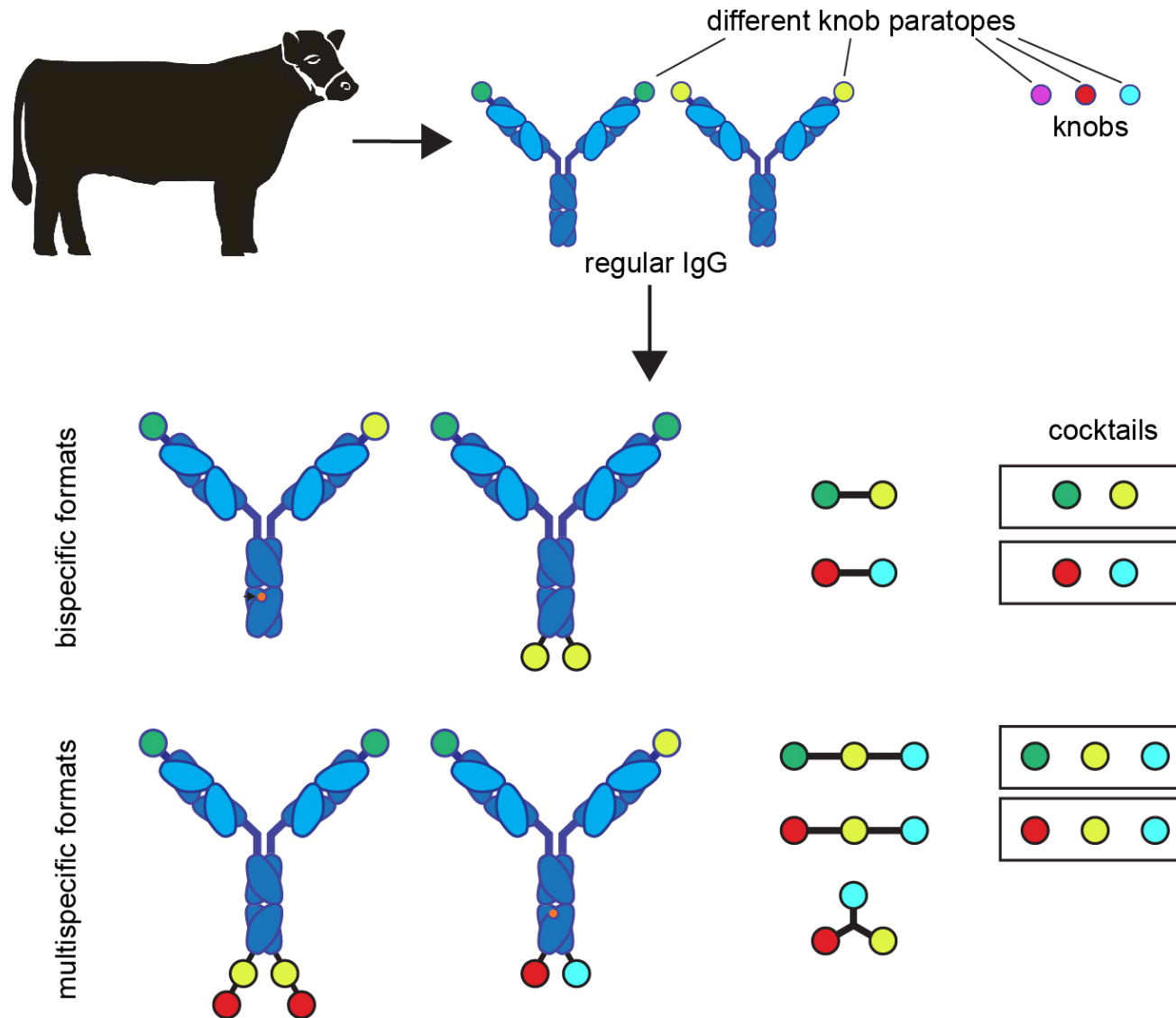


- Novel structure may enable targeting epitopes unreachable by standard antibodies
- Long H3 domains can be expressed on human VH framework, or alone as ~5kD Picobodies™










Stanfield, et.al. *Sci Adv* (2020) 6(20): eaba0468.

Picobodies™ as Building Blocks for Novel Therapeutics



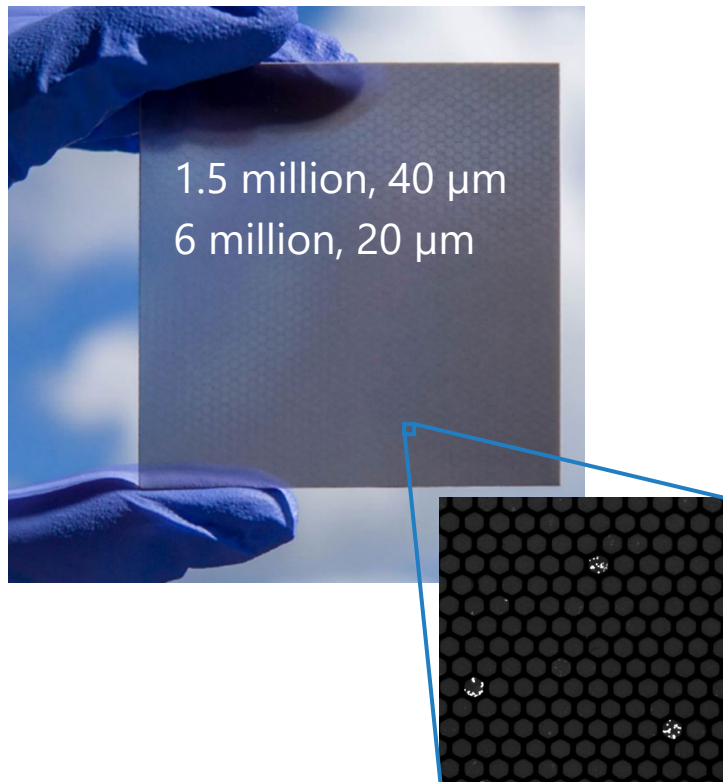
OmniAb Antibody Repertoires

OPTIONS AVAILABLE TO ADDRESS DIVERSE PARTNER OBJECTIVES

Host	V genes	Structural and immunological features	Benefits for therapeutics discovery and development
 OmniMouse	Full human V gene diversity Choice of light chain isotype	Diverse V gene usage and mixed genetic backgrounds	Widely accessible and flexible workflows
 OmniRat	Full human V gene diversity Choice of light chain isotype	Diverse V gene usage and mixed genetic backgrounds Distinctive target recognition	Industry standard Widely accessible and flexible workflows Extensive track record
 OmniChicken	Single framework VH3/VK3 or VH3/VL1	Evolutionarily divergent host system for robust immune responses	Diverse and new epitope coverage High homology targets Excellent physical properties
 OmniFlic	Full human VH gene diversity with non-diversifying VK3	Fixed light chain for bispecific applications	Bispecific applications leveraging standard IgG format
 OmniClic	Single framework VH3/non-diversifying VK3	Fixed light chain for bispecific applications	Diverse epitope coverage Excellent physical properties Ease of manufacturing
 Omni <i>dAb</i>	Single camelized human VH framework with truncated LC	Domain antibody of the "VHH" type	Diverse and new epitope coverage from human single-domain format, 12-15kD Building blocks for multispecific molecules
 OmniTaur	Single framework VH4/VL1	Ultralong CDR-H3's for enormous structural diversity	Access cryptic epitopes Unique modalities (picobodies™) Building blocks for multispecific molecules

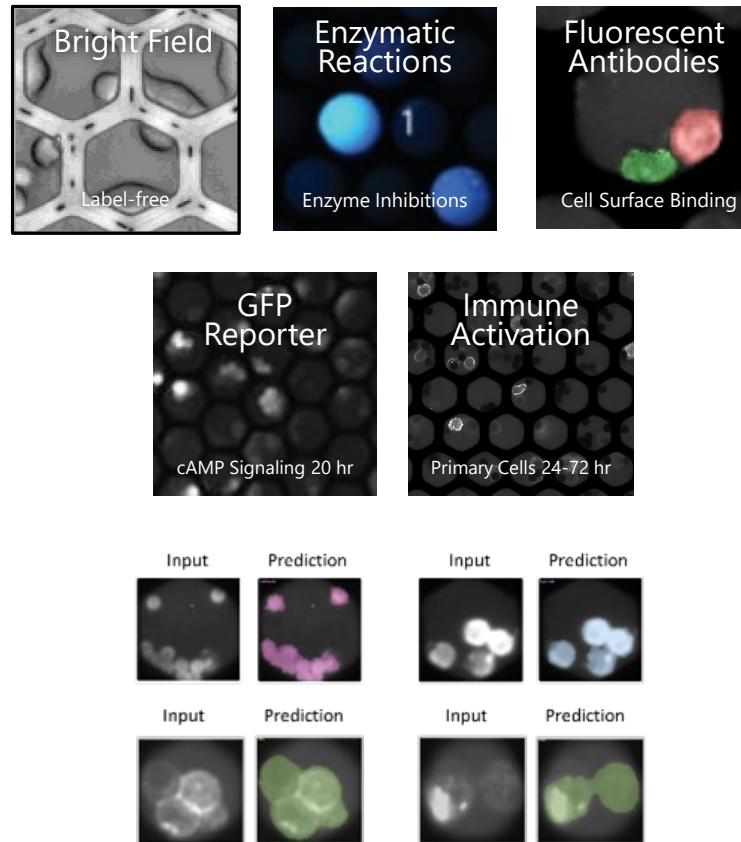
Screening Technology: xPloration®

1 | Loading



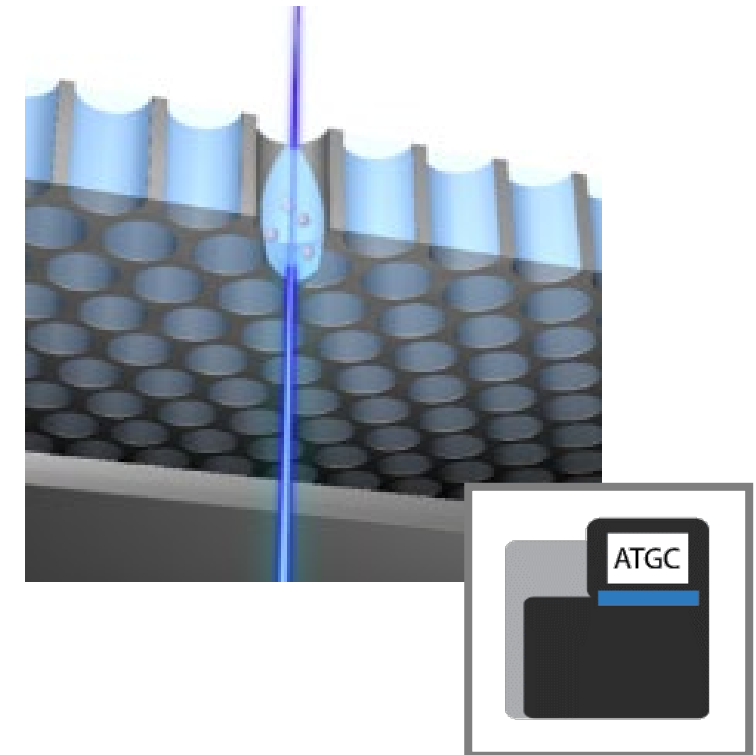
Unique through-hole format
Workflows for OmniAb B-cells

2 | Assay + Machine Vision



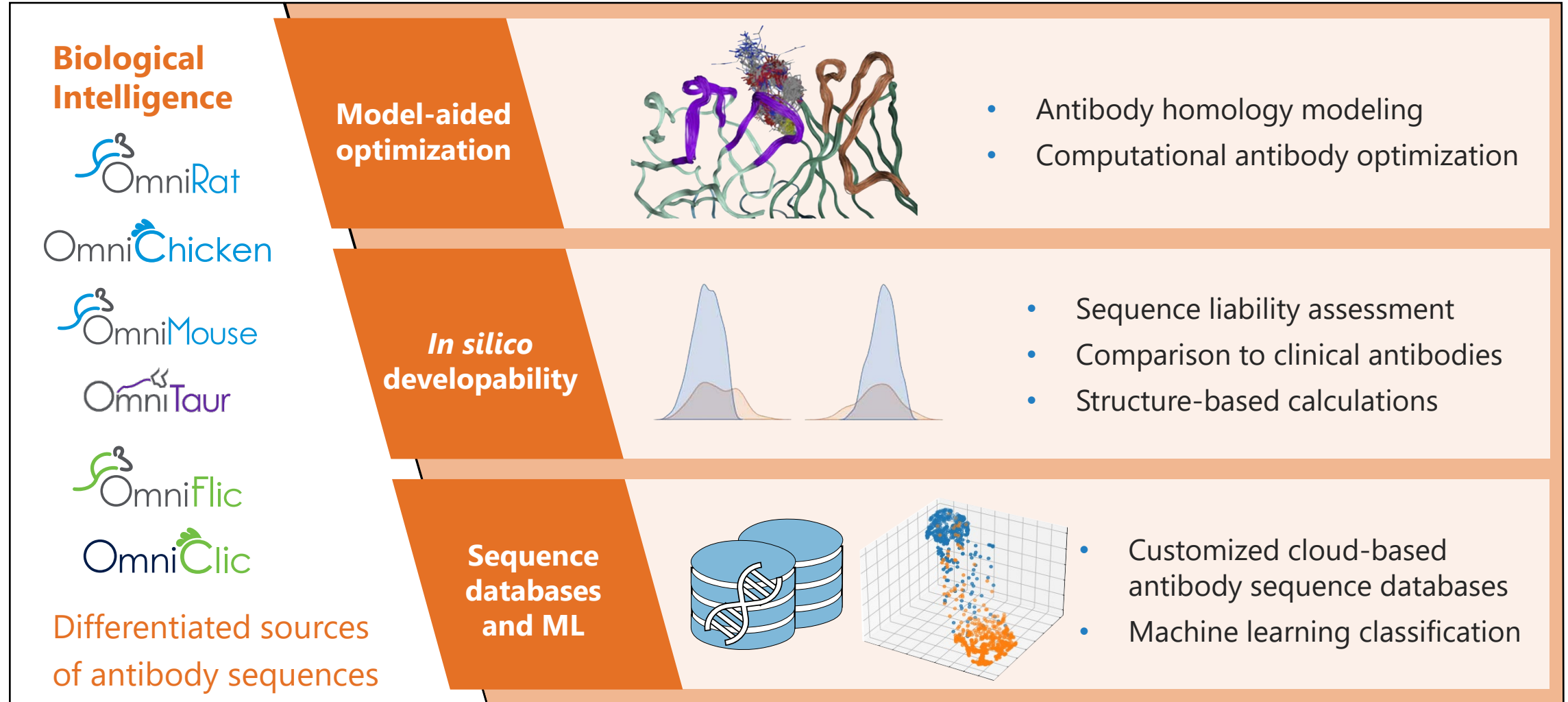
AI-driven hit detection

3 | Recovery & Single-Cell NGS

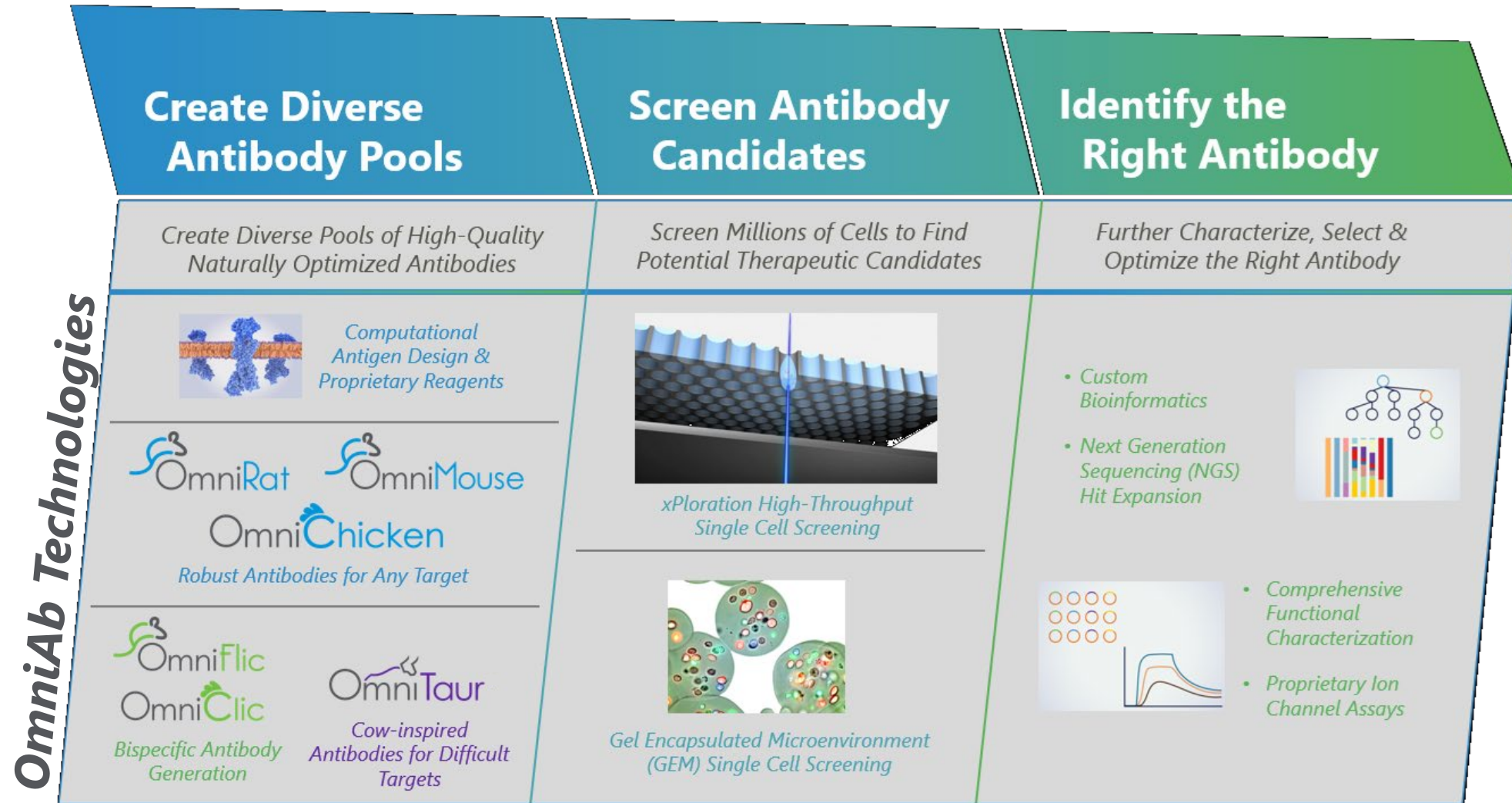


Precise laser-based recovery
1 cell/sec (single-cell mode), single-cell barcoding

Leveraging Biological Intelligence with Computational Tools



The OmniAb Platform



Technology offering addresses the most critical challenges of antibody discovery

OmniAb[®]

**THANK YOU TO THE
OMNIAB TEAM!**

www.OmniAb.com

