

From Target to Lead mAbs: VHH Discovery with DiNabody™

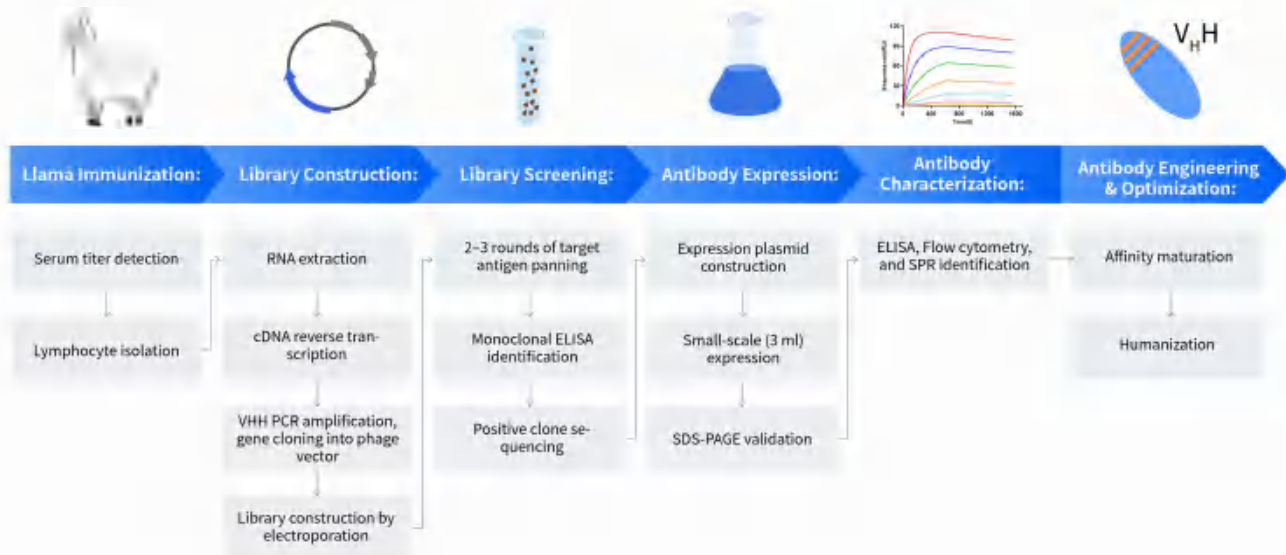
Streamline your pipeline with compact, stable VHH antibodies engineered for high affinity, specificity, and clinical viability.

DiNabody™ offers a full-service platform for single-domain antibody (VHH) development, covering every step from antigen preparation and camelid immunization to antibody discovery with phage display, followed by engineering and optimization using mammalian cell display. This integrated process delivers high-affinity, highly specific antibodies with excellent druggability, designed to accelerate therapeutic, diagnostic, and bioengineering applications.

Why Choose VHH Antibodies Over Traditional mAbs?

Feature	VHH Antibodies	Traditional mAbs
Size	Small (~15 kDa), easy tissue penetration	Large (~150 kDa), limited tissue access
Stability	Highly stable, functional at ~70°C	Less stable at high temperatures
Immunogenicity	Lower, closer to human antibodies	Higher, often requires humanization
Epitope Access	Can reach recessed/hidden sites due to long CDR3 loops	Limited access to deep epitopes
Engineering Ease	Simple structure enables easy affinity maturation and bispecific designs	More complex engineering required

Workflow



Project Timeline and Deliverables

Stage	Service Content	Time Frame	Deliverables
I	Antigen preparation (or provided by the client)	2-3 weeks	Quality Control Data
II	Animal immunization (Alpacas)	8-10 weeks	Serum titer report, Serum
III	Library construction	1 weeks	library quality assessment report (capacity $\geq 10^7$)
IV	Antibody screening (solid-phase, liquid-phase, etc.)	2 weeks	ELISA assay report, positive nanobody sequences
V	Antibody expression and evaluation (ELISA, FACS, SPR, etc.)	2 weeks	assessment report
VI	Report compilation	1 weeks	project report

DIMA Features



Efficient delivery of FACS-validated nanobody sequences



Customer-specific llama allocation to avoid repeated immunization



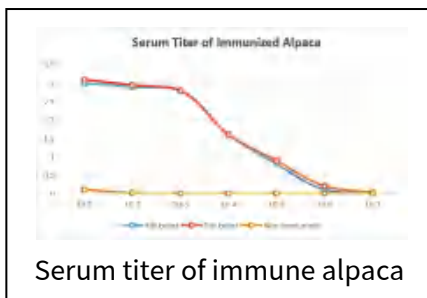
Dual technology platform: phage display and mammalian cell display



One-stop service for humanization and affinity maturation

Case Study on the Development of Target X

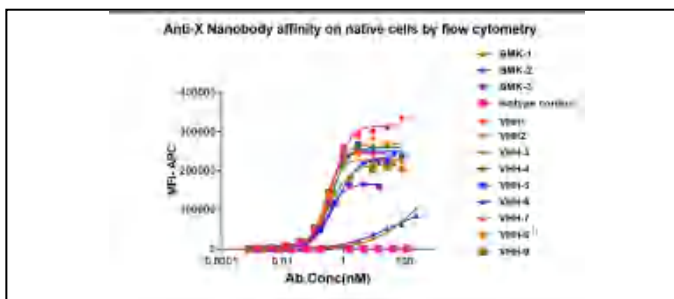
1. Animal Immunization



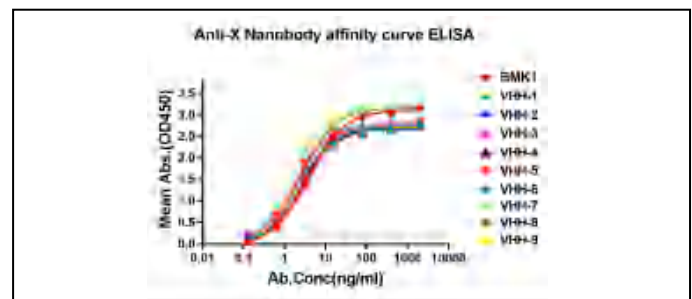
2. Epitope Analysis

Antigen.Conc 1µg/ml	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Domain 6	Domain 7	Full-length protein
Ab.Conc(2 µg/ml)	OD450							
VHH-1	2.8058	0.2722	0.4761	0.332	0.4499	0.3576	0.3477	2.3135
VHH-2	0.7147	0.4814	2.8554	0.6482	0.7381	0.5899	0.6537	2.4229
VHH-3	0.4559	0.1374	2.3179	0.1479	0.2626	0.1459	0.3054	2.3315
VHH-4	2.2263	0.3388	0.4845	0.4863	0.5365	0.4351	0.5614	2.1825
VHH-5	2.229	0.175	0.1829	0.1958	0.207	0.2276	0.2221	2.2669
VHH-6	2.4467	0.5772	0.7675	0.7972	0.8539	0.6305	0.7364	2.2813
BMK-1	2.3235	0.0903	0.0815	0.0708	0.0831	0.0781	0.0505	2.0482
Blank (Anti-VHH)	0.0619	0.0491	0.0522	0.0447	0.0542	0.0502	0.0554	0.2572
Blank(anti Human Fab)	0.0646	0.0546	0.0589	0.0516	0.0657	0.0572	0.0468	0.0527

3. FACS



4. ELISA



5. Cross-species ELISA

