neochromosome

neoDisplay™

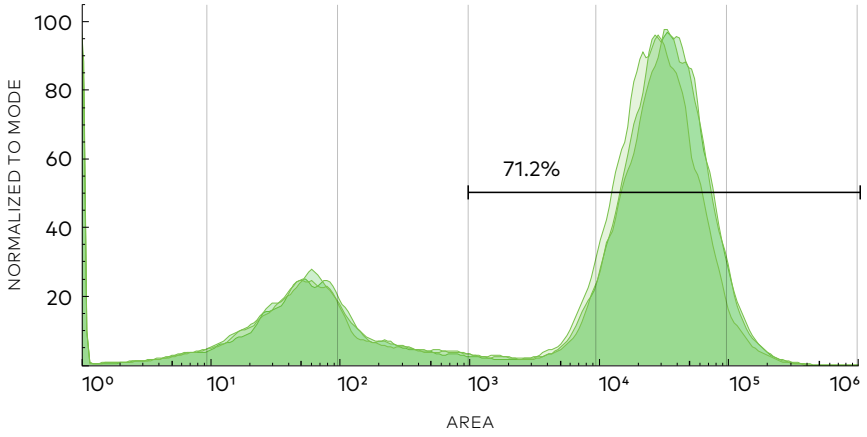
Part of Neo's Antibody Toolkit™

neoDisplay™ offers turnkey access to yeast display, a highly sensitive method of binder discovery leveraging fluorescence activated cell sorting (FACS) for isolation of developable, specific, and high affinity binders. neoDisplay™ comes pre-transformed with high diversity libraries for "plug and play" yeast display workflows. Perform discovery, affinity maturation and humanization campaigns more rapidly by combining libraries delivered in neoDisplay™ with Neo's 3-day sequencing and rapid variant library construction.

Libraries

PRE-TRANSFORMED LIBRARY	DETAILS	TIME TO DELIVERY
Neo-Designed Synthetic VHH Library	Llama VHH library	Ships immediately
Customer-defined Library	Custom mutational schema	Subject to library build time
Existing Starting Material	e.g. cDNA from immunization, pre-existing library	Subject to library build time

Figure 1: Representative FACS histogram of anti-Myc signal from a displayed VHH construct.



neoDisplay™

Iterative campaigns to generate diversity from top hits

FEATURES	DETAILS
% of population display	70% (comparable to EBY100)
Displayed construct	N-terminal Aga2 – antibody fragment – C-terminal Myc tag
Pre-transformed	Aliquots of yeast transformed with Neo's synthetic naive VHH library or customer library at high diversity (e.g.10^9)

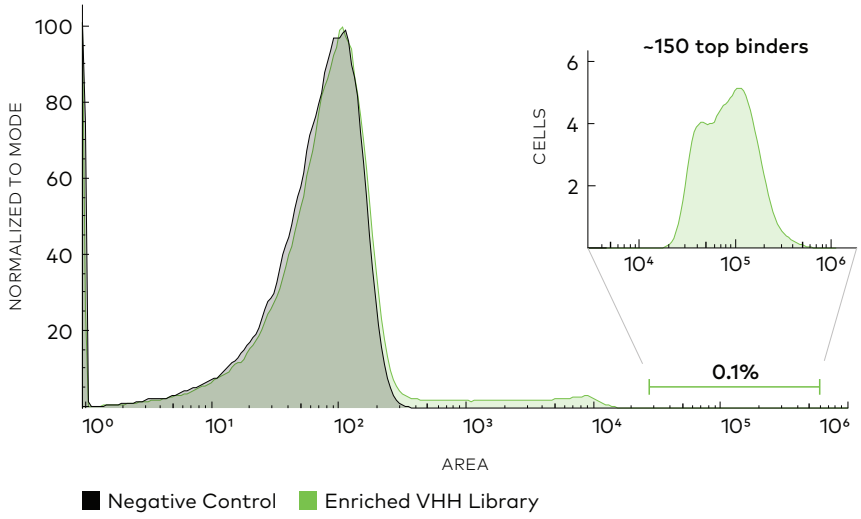
Synthetic VHH Library

Synthetic naïve library for antibody discovery

FEATURES	DETAILS
Library size	1.3 x 10^9
Backbone	Llama framework to enable high affinity binder discovery
CDR diversity	• Controlled mutagenesis library biased for CDRs to create functional binders • CDR3 is a mixture of 3 different lengths • Sequence liabilities (e.g. cysteine and methionine) are removed
Library validation	Library diversity validated in neoDisplay by NGS; amino acid frequency matches design
Performance Validation	We performed a discovery campaign against human PD1 and discovered 33 unique binders (defined as CDR3 with at least 2 AA differences from any other sequence in set)

Neo's Synthetic VHH Library: Product Features

Figure 2:
Representative FACs library of negative control (black) and an anti-PD1 enriched synthetic VHH library (green). Top 0.1% of the population was sorted to enrich for highest affinity binders.



Using neoDisplay transformed with Neo's Synthetic VHH library, we performed a discovery campaign to identify binders to PD1. We performed 2 rounds of negative selection to remove non-specific binding and 3 rounds of positive selection against PD1. We isolated 96 single cells from the positive sorting gate and identified 33 unique binder sequences (defined as at least 2 differences in CDR3 sequence).

HOW TO WORK WITH NEO

To get started, please email a project description to **info@neochromosome.com**