

Own Your Molecules: Therapeutic Antibody Discovery

Humanized Antibodies without Royalties

Integrated platform from PentaMice[™] to Humanized Antibodies

LakePharma provides a seamless transition from discovery to humanization that brings your molecules closer to the bedside. Discovery begins with the PentaMice™ Platform, a royalty-free set of mice comprising 5 WT strains that cover 9 distinct MHC haplotypes. A total of 10 mice (2 mice of each strain) are included in each set to cover a wide range of MHC haplotypes to enable effective T cell help, thus achieving maximum plasma titers and boosting the opportunity to generate high-quality antibodies *in vivo*.

Humanization of your mouse IgG's aims to lower the risk of patient immunogenicity. Antibody CDR's from your novel sequences are grafted onto a human framework. This strategy aims to maintain the original affinity and specificity and is coupled with performing back mutations to afford CDR loop stability and VH-VL pairing. Recombinant production and kinetic assessment of the humanized hlgG complete the humanization process, prior to final delivery of sequence and materials.

Highlights

- Royalty-free platform that delivers humanized antibodies discovered via PentaMice immunizations and hybridoma based campaigns
- Platform comprises 5
 WT strains that cover 9
 distinct MHC haplotypes
- 5+ years of successful humanization expertise and 1000 humanized variants delivered for client testing and development
- Fast timeline of integrated services from PentaMice immunization to humanized antibodies: ~6 months

The Five Wildtype Strains in the PentaMice™ Platform





d x u





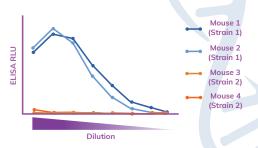


qxv

Mixed

From mlgG to hlgG: Hybridoma Discovery + Humanization Designs

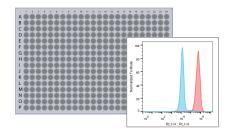




Plasma titers are highly predictive of antibody discovery success. Based on LakePharma's experience, there is often a strong strain-dependent difference in plasma titers for most targets.



Screening

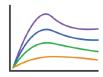


- Hybridoma generation by electrofusion
- 384-well plate high throughput screens (ELISA or multiplex FACS)
- Data master files for candidate selection
- Monoclonal hybridoma generation & VH & VL sequencing









Sequence Analysis

- Antibody sequence analysis and homology modeling of mAb 3D structure
- Identification of key positions supporting CDR loop and VH-VL interface

Generate Humanized Variants

- At least 9 designed humanized variants for each parental sequence
- T20 humaness score analyser
- TunaCHO or 293 expression of humanized variants

Variant Analysis

- Expression and productivity assessment
- Confirm binding by Octet® or cell-binding by flow cytometry as compared to parental sequence

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