

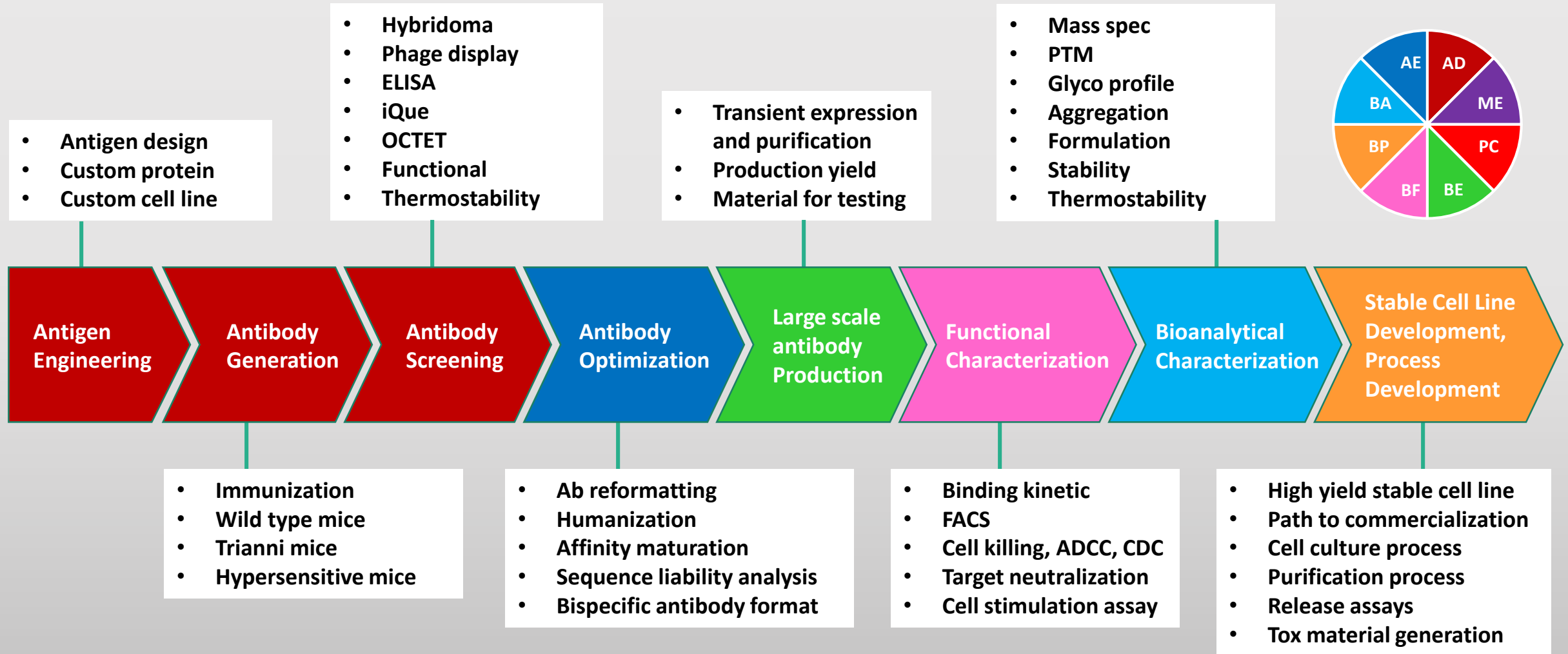
# LakePharma Antibody Discovery Overview

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**LakePharma**

# LakePharma Offers Integrated Solutions for Antibody Drug Discovery and Development





Antigen  
Engineering

LakePharma works closely with clients to assess the best immunogen design and strategy and offers novel products to ensure success against difficult targets and traditionally non immunogenic epitopes such as:

- Custom immunogenic UberCells™ which display cell surface targets in native conformation are generated at LakePharma.
- Proprietary vector system for sustained high expression using DNA immunization
- Immunogen modifications without altering folding or function that dramatically improve epitope diversity



Antibody  
Generation

High affinity somatically mutated mAbs generated in vivo with short timelines:

- A single dose of UberCells™ results in high affinity functional mAbs from a 3 week immunization. UberCells™ act as a powerful adjuvant which dramatically increases immunogenicity, while displaying cell surface proteins in their native conformations.
- LakePharma's RIMMS protocol generates a powerful high affinity response in 2 weeks.
- DNA immunizations



Antibody  
Generation

Discovery of human mAbs using Trianni mice. The Trianni platform is world class, delivering high affinity functional mAbs with diverse gene usage and require no humanization.

- LakePharma is the service provider for therapeutic discovery using Trianni mice in the U.S.A.
- Other strains of mice also available for immunization
- Can work with client's transgenic mice.



Antibody  
Screening

LakePharma employs a proprietary high fusion efficiency myeloma coupled with electrofusion to ensure generation of large numbers of hybridomas followed by high throughput screening.

- Screening is carried out in 384 well plates.
- Functional screens are incorporated early in the process.
- Kinetic screening incorporated early to ensure high affinity antibodies
- Simple and rapid 1-step cloning.
- Variable region sequencing and analysis.

# Antibody Discovery - Summary

- Custom immunogen preparation
- UberCell™ immunizations for functional mAbs against membrane targets displayed in native conformation
- DNA based or rapid protein based RIMMS immunizations
- Strategies for breaking tolerance enabling cross reactivity and strong response to conserved targets
- Proprietary myeloma line for high fusion efficiency
- 384 well screening of hybridomas
- Incorporation of functional assays in screening cascade
- Delivery of clonal, functional, purified mAbs along with V-region sequences, and functional data

