# BIOPHARMA SERVICES



Accelerate biologics development with seamless clone and process optimization

GeNext Genomics specializes in advancing biologics through cutting-edge clone development and process optimization. From gene synthesis to protein expression and purification, we ensure seamless transitions from upstream to downstream processes. Leveraging advanced platforms like CHO GS and Octet systems, we deliver high-quality solutions tailored for biosimilar development and therapeutic innovation.

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87998 29691

www.genextgenomics.com

info@genextgenomics.com

## Phage Display Antibody Library

### HIND- Human Immune Naive Discovery Antibody Library Platform

Proprietary phage display library for production of high affinity monoclonal antibodies tailored to diverse research and therapeutic applications

#### Phage Display Technology

GNG

Phage display is a selection technique that involves genetic engineering of bacteriophages and repeated antigenbased selection and propagation. It offers a promising alternative for antibody generation outside the immune system, eliminating the need for laboratory animals. Antibody libraries are crafted from genomic information encoding antibody variable domains, sourced from B cells of either native or immune donors.



Diverse population gene pool across various disease background and healthy donors Cloning of VH and VL in pr phagemid r Vector

Library Pa preparation and transfection p

Packaging and Phage preparation Biopanning against the target 4 round ScFv generation and Sequencing of Binders Final IgG cloned and expressed in HEK

#### Our phage display service offerings

Steps	Description	Deliverables
Library screening and biopanning	Selection and screening of the naïve or immune library. 4-5 rounds of biopanning to enrich binders	Progress report
ELISA screening	Screening and validation by ELISA to identify binders with desired specificity and affinity	Progress report
DNA extraction and sequencing	Extraction and sequencing of DNA from identified binders	Report DNA sequences
Development of full IgG	Gene synthesis Cloning of gene into a proprietary vector Transfection of host cell, screening, scale up & purification	Purified IgG antibody
Affinity Maturation	Enhancing the affinity and specificity of your antibodies through our affinity maturation services, optimizing their performance for various applications.	High affinity antibody
Antibody Characterization	Epitope mapping to determine the specific antigen binding site Binding kinetics analysis to measure the strength of antibody-antigen binding	Characterization report

Leveraging the power of phage display technology, we provide tailored solutions for discovering high-affinity antibodies to meet your unique requirements. Our high-quality Antibody libraries, enable comprehensive exploration of potential CDR variants, ensuring thorough hit identification.

### Cell Line Development



### From target to therapy!

The Cell Line Development (CLD) procedure starts after the lead candidate has been found and a vector has been created for the chosen host cell. The procedure is customized to meet the needs of the program and the molecule. The vector is transfected into a monoclonal host cell line that can be used in production and will be able to produce high titers and the necessary product properties.

#### Key component

Well characterized CHO –GS and CHO-S host cell line with documented history

Biosafety testing of cell line and bioanalytical protein characterization DNA to RCB in 9-12 weeks

High cell densities up to 40-60 million cells/mL, 80% viability -Protein titers up to 8 g/L GS selection system

Robust, easy transfer to manufacturer CMO

#### From DNA to fully characterized RCB in just 9 Months



#### **DNA to Pool Material**

- Performance check of molecules in our ready-toscale 
   <sup>®</sup> CHO platform
- Candidate evaluation & screening
- Early protein material supply

#### **DNA to RCB**

- Workflow optimized for shortest duration
- Maximal time saving fast decisions by our experts
- Interim data package for information

#### **RCB** submission for MCB

- CQA evaluation on clone
  level
- Control on Clone Selection
- One to One Data sharing
  and discussion

Collaborate with our cell culture teams to use our cutting edge technology, expertise, and a reputable and stable cell line through the use of our UCOE Gene Expression Systems in conjunction with our CHO-GS and Freedom CHO Platform.

# Advanced Analytical Capabilities

### GNG

"Our advanced analytical capabilities include state-of-the-art SPR/BLI analysis with the Octet system and UPLC for precise characterization of clones and antibodies. These technologies ensure robust data for biopharma and biosimilar development."

Extensive analytical characterization is crucial throughout each stage of drug development, including both the process and product development phases. At GeNext Genomics (GNG), we provide comprehensive analytical services to ensure the highest quality and efficacy of your drug products. Our advanced UPLC and Octet systems enable detailed assessments that guarantee consistency and adherence to regulatory standards.

#### High Throughput System for Biologics Discovery, Development, QC, and Manufacturing

- SPR/BLI Analysis: High-precision binding affinity and kinetics measurements for antibodies, biosimilars, and therapeutic proteins.
- Epitope Binning: Detailed mapping of antibody-antigen interactions to assess binding site specificity.



Protein Quantitation in Bioprocessing





 Kinetic Analysis: Determination of association and dissociation rates, ensuring accurate evaluation of biomolecular interactions.



• Quality Control (QC) and Manufacturing

