



**ABOUT
LAMPiRE**



**OUR
FACILITY**



**OUR
TEAM**



**QUALITY
MATTERS**



**BIOLOGICAL
PRODUCTS**



**CUSTOM
ANTIBODY SERVICES**

► CONFIDENTIAL

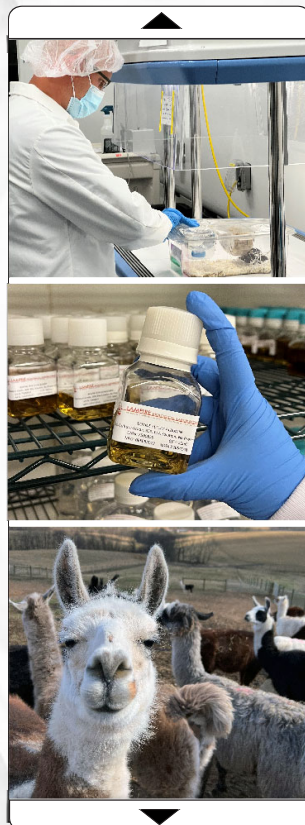


Please be advised that the presentation shows confidential information and is not to be shared or disclosed to any third party. This is an inside look at our operations and may include details on processes, protocols, or equipment that are proprietary to our organization.

We ask that you maintain the confidentiality of this information to protect our competitive advantage. Thank you for your cooperation.







▶ ABOUT LAMPIRE

Founded in 1977, Gregory F. Krug, and his team of employees, have built LAMPIRE into the company it is today. With multiple farming campuses and four strategically located state-of-the-art laboratory facilities throughout Pennsylvania, LAMPIRE continues to expand its reach and capabilities.

Encompassing over 600 acres, LAMPIRE houses over 7,000 animals, representing over 20 unique species. LAMPIRE has over 170 experienced laboratory and animal husbandry technicians manufacturing our products and services under the guidelines of ISO 13845:2016 and AAALAC.



DIAGNOSTICS



PHARMACEUTICAL



BIOTECHNOLOGY



MEDICAL DEVICES



▶ ABOUT LAMPIRE

LAMPIRE's extensive and diverse product offerings, along with its commitment to quality, have established the company as an invaluable partner to the diagnostic, pharmaceutical, biotechnology, and medical device industries.

With more than 5,000 part numbers assigned, LAMPIRE provides a wide range of tools and materials to support scientific and medical advancement. The company's rigorous QMS ensure that customers receive the highest quality products, earning LAMPIRE a reputation as a trusted and dependable supplier to these industries.



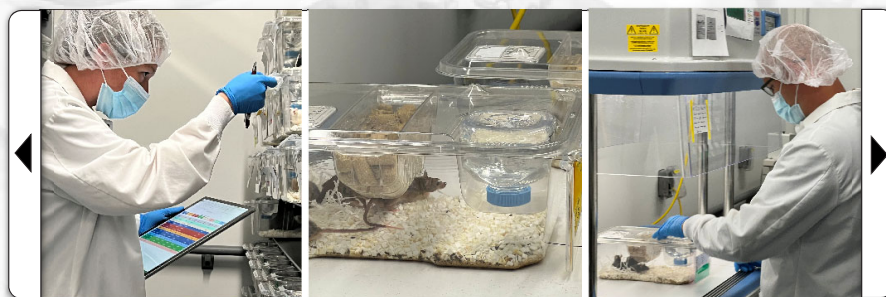


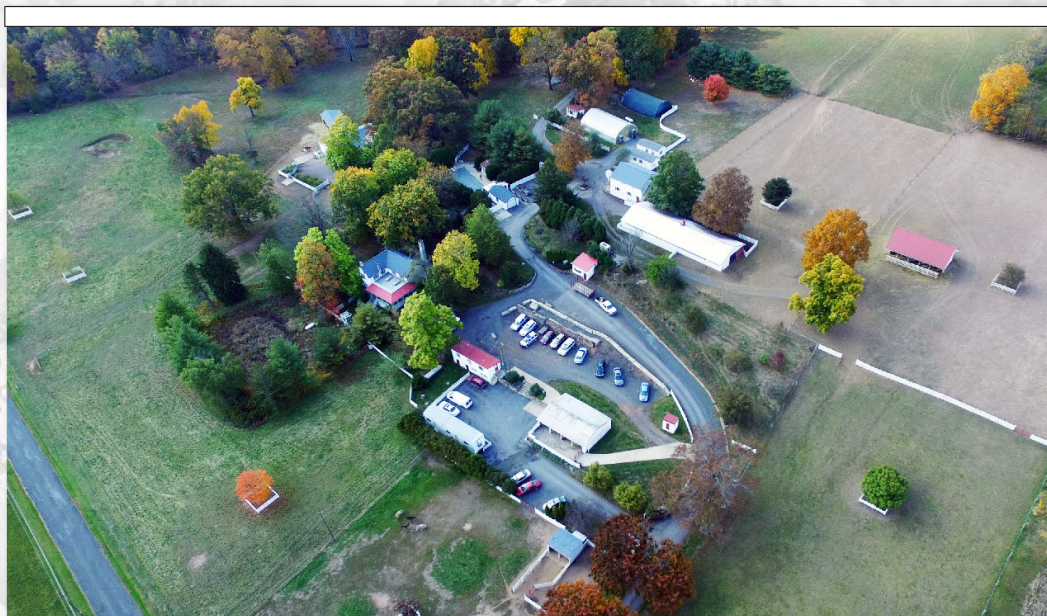
► OUR FACILITY

BIOTECH RESEARCH & RESOURCE CENTER

PIPERSVILLE, PA

LAMPIRE's Pipersville Biotech Research & Resource Center is an advanced laboratory facility that covers 18,000 square feet of space. Established in 1997, it has certified class 2, 5, and 7 rooms/hoods that enable it to perform various biotechnology processes such as cell culture, cell banking, viral transport media preparation, purification, monoclonal antibody production, recombinant B-cell isolation, and hybridoma development. The facility also has a modern small animal vivarium that supports its research activities.



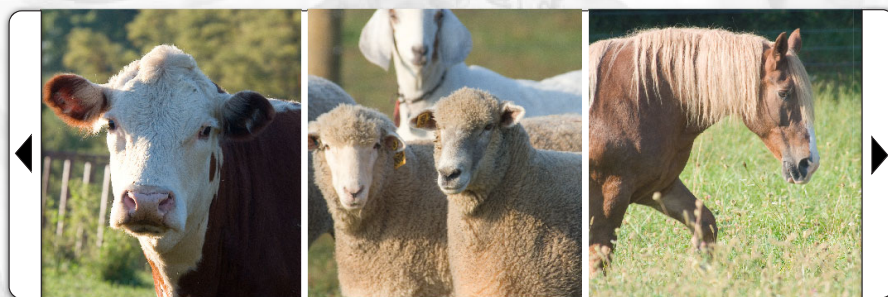


► OUR FACILITY

PHARM CAMPUS & CORPORATE HEADQUARTERS

OTTSVILLE, PA

LAMPIRE's Ottsville Farm is a 40-acre facility that houses both small and large animals in state-of-the-art vivariums and donor herd enclosures. Established in 1982, it is the company's first and oldest location, and it has undergone several expansions and improvements over the years to enhance its quality and efficiency. The farm also serves as the headquarters for LAMPIRE's office support team members, who work in various departments such as customer service, marketing, IT, accounting and HR.





► OUR FACILITY

PROCESSING LABORATORIES

COOPERSBURG, PA

LAMPIRE's Coopersburg Laboratory is a specialized facility that handles the collection and processing of various biological materials, such as specialty organs and tissues, abattoir-related blood and materials, donor animal blood products, and LAMPIRE's human blood products. The laboratory was acquired by LAMPIRE in 1986 and has been continuously updated ever since to meet the clients' needs. The laboratory spans 5,000 square feet of space and has state-of-the-art infrastructure and workflow that enable it to deliver high-quality products and services.



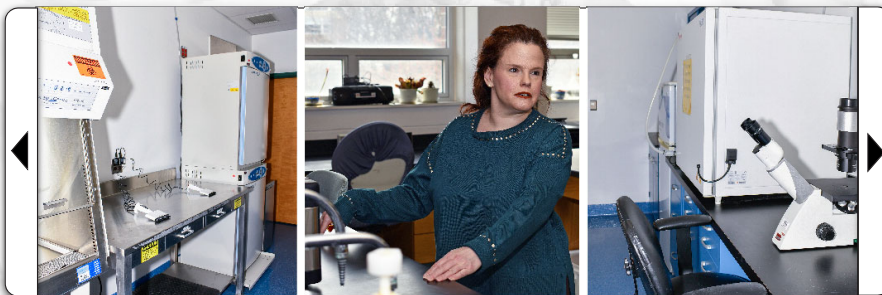


▶ OUR FACILITY

BIOTECH INCUBATOR SITE

MILLERSVILLE, PA

LAMPIRE's Millersville Incubator Lab is a shared and secured laboratory space that offers various biotechnology services. The laboratory has a Biosafety Level 2 Viral Lab that performs antiviral testing and other custom-designed assays, such as antibody/antigen ELISA and live cell ELISA. The laboratory also has a range of equipment to support its research activities, such as biological safety cabinet, CO₂ incubators, automated cell counter, microscopy, LN Dewars, plate reader and spectrophotometry. The laboratory covers approximately 250 square feet of space and provides LAMPIRE an opportunity to work in conjunction with a magnificent research institution.





► OUR FACILITY

PHARM CAMPUS

EVERETT, PA

LAMPIRE's Everett Pharm Campus is a state-of-the-art in vivo facility that covers over 600 acres of land and hosts a variety of closed donor herds for custom antisera, donor sera, and red cell production programs. The campus has over 32 animal vivariums that can accommodate multiple species, from small laboratory animals to larger domestic and unique breeds. The campus is AAALAC accredited and has a state-of-the-art small animal vivarium among its featured facilities. The campus offers flexible and reliable solutions for LAMPIRE's operations and clients.





▶ OUR FACILITY

BIOPROCESSING LABORATORY

EVERETT, PA

The Everett Bioprocessing Laboratory, constructed in 2007, comprises 18,000 square feet of cutting-edge laboratory space. Located in close proximity to the Everett Pharm Campus, this facility specializes in immunochemistry services, tissue processing, blood product processing, and purification. Major equipment and space renovations, aimed at meeting client demand, have led to the creation of specialized contract manufacturing areas and have attracted a talented, diverse workforce to LAMPIRE.





▶ OUR TEAM

Our team is comprised of over 170 professionals with diverse backgrounds and skill sets

Our experienced and customer service-oriented teams are what sets LAMPIRE apart from others in the industry

We have a comprehensive QMS system in place to ensure the highest level of quality, safety, and compliance

Our team adheres to standard operating procedures for day-to-day processes and committed to having attending veterinarian at each site

We comply with ISO 13485:2016, AAALAC, FDA, USDA, and OLAW regulations

Our team includes AALAS certified technicians.





▶ OUR TEAM

Our entire animal care program is overseen by veterinarian professionals.

Each team works seamlessly to ensure efficient and effective execution of our clients' projects.

We are committed to investing in our personnel's continuous training and development to remain at the forefront of the industry.

We have highly trained staff that includes:

- Animal & Veterinarian Care Teams
- Manufacturing & Production Personnel
- Project Manager & Support Staff
- Customer Service/ Sales Representatives
- Marketing & Public Relation Specialist
- Scientific Technical Development Staff
- Quality Assurance Teams
- Global Logistics Coordinators





► QUALITY POLICY

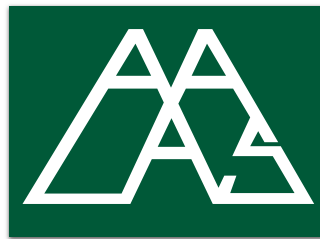
To provide consistently and competitively, high quality, reliable products and services in conformity with **ISO 13485:2016** and our customers' specifications; while continuing to improve the effectiveness of our quality management system.

In pursuit of this mission, we are dedicated to the following: Treating our customers in a courteous, thoughtful manner; Maintaining our commitment to the health and wellbeing of our animals, according to AAALAC guidelines; Fostering innovation and creativity in research; Producing high quality products at fair prices;

Striving to GET IT RIGHT THE FIRST TIME...EVERY TIME!



▶ ACCREDITATION





► OUR ANIMAL CARE PROGRAM

LAMPIRE's Animal Husbandry Program is a core value of the company and reflects its commitment to animal welfare and ethical standards. The program ensures that the animals are provided with optimal care and conditions by the staff, who are trained and certified in animal care.

The program includes:

- *A well-regulated diet that meets the nutritional needs of the animals*
- *Daily observation and monitoring of the animals' health and behavior*
- *Housing that maximizes efficiency and productivity, ensures cleanliness, safety, appropriate light/dark cycles, and good visibility*
- *Knowledgeable onsite staff who handle animal care and respond to any issues promptly*
- *On-staff veterinarians who oversee the health of all animals and provide medical treatment as needed*
- *Regular inspections by the internal IACUC committee and external agencies such as USDA and AAALAC to ensure compliance with all regulations and guidelines*





► OUR ANIMAL CARE PROGRAM

LAMPIRE's Animal Enrichment Program is a vital part of the company's animal welfare policy and reflects its respect and appreciation for the animals. The program aims to provide the animals with stimulating and engaging activities that allow them to express their natural behaviors and enhance their well-being.

The program includes:

- *Nutritional supplements that offer variety and taste to the animals' diet*
- *Foraging and/or nesting opportunities that challenge the animals' cognitive and physical skills*
- *Chewing/gnawing aides that satisfy the animals' oral needs and prevent boredom*
- *Social interaction and companionship that foster the animals' emotional and social development*

The program has been implemented for every species onsite for over 46 years, and it is constantly updated and improved by the staff, who are passionate and creative about animal care. The program not only benefits the animals, but also the company, as it helps to create quality products and services for the clients.





► PRODUCTS & SERVICES

60%

PRODUCTS

BIOLOGICAL PRODUCTS
PURIFIED PROTEINS & REAGENTS
SPECIALTY PRODUCTS

40%

CRO SERVICE

INCLUDING CUSTOM POLYCLONAL
& MONOCLONAL ANTIBODY
PRODUCTION

75%

**OF ALL ORDERS
ARE CUSTOM**





▶ BIOLOGICAL PRODUCTS

- Donor Animal Blood Products
 - Whole Blood
 - Defibrinated, Lysed, Laked Blood
 - Washed Red Blood Cells
 - Domestic Serum & Plasma
 - Non-Domestic Serum & Plasma
- Human Blood Products
 - Whole Blood
 - Normal Plasma
 - Defibrinated Plasma
 - Sera from Anticoagulant-Free Whole Blood
 - Blood Components
 - Specialty Products
- Abattoir Blood Products, Organs, and Tissues

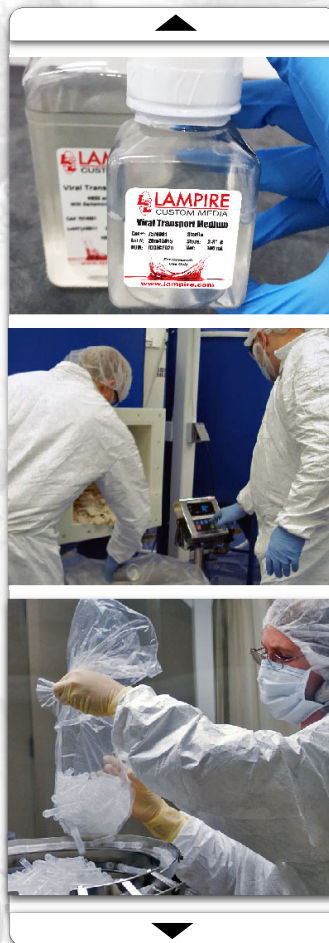
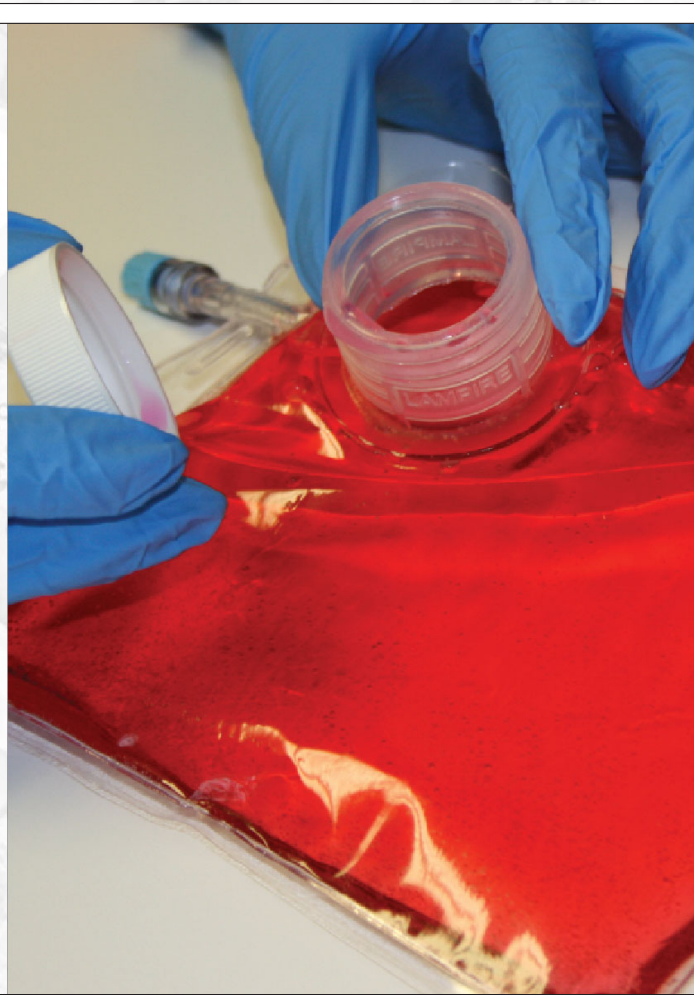




► PURIFIED PROTEINS & RELATED REAGENTS

- BSA; Domestic and New Zealand Sourced
- Bulk Normal Immunoglobulins
- Secondary Antibodies
- Antibodies to Drugs of Abuse
- Custom Purified Immunoglobulins and Conjugates

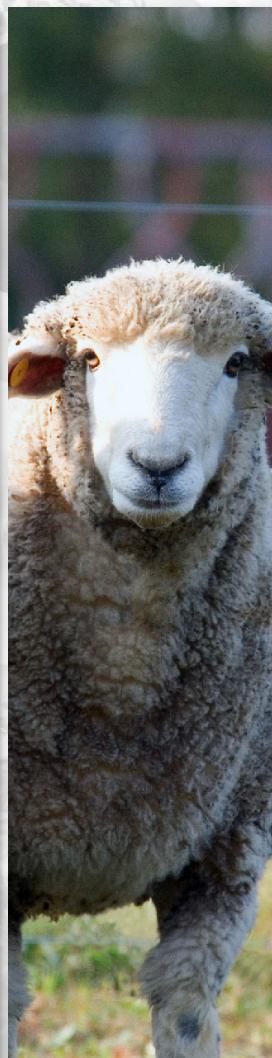
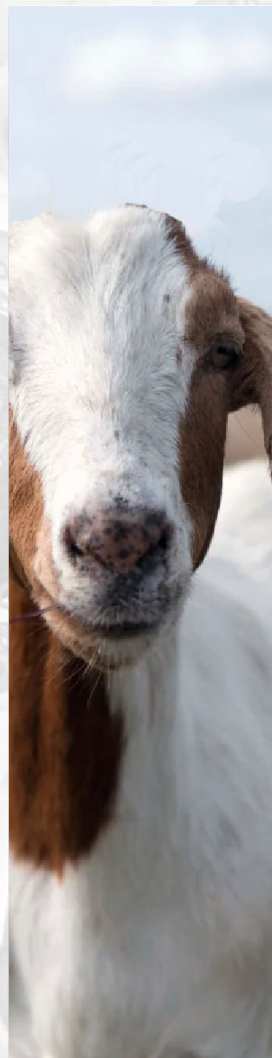




► SPECIALIZED PRODUCTS & SERVICES

- Lobster Hemocynin
- OMNI C3® Cell Culture Bags
- VTM (Viral Transport Media)
- Assay Development
- Contract Manufacturing
- Collaborative Research
- Pharmacokinetic Studies





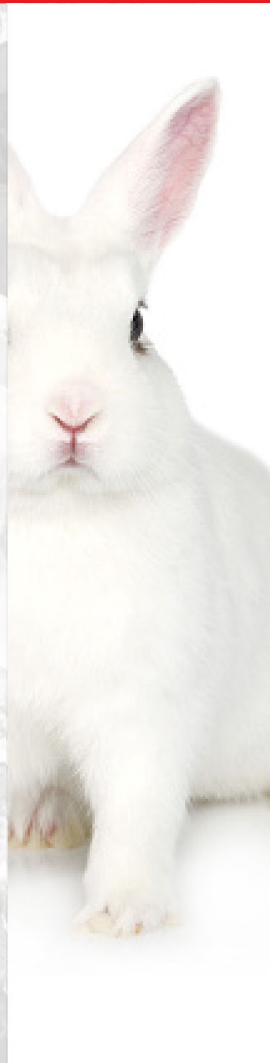
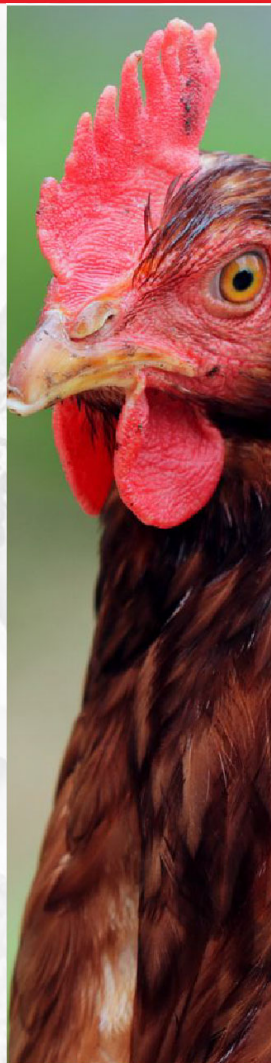
► CUSTOM POLYCLONAL ANTIBODY SERVICES

At LAMPIRE, we offer high-quality polyclonal antibody production services using a variety of animal species, such as rabbits, goats, sheep, chickens, and more. Our polyclonal projects are designed to meet your specific needs and goals, from antigen selection and immunization protocol to purification and characterization methods.

We adhere to the highest standards of animal welfare and ethical practices, as evidenced by our IACUC review and AAALAC accreditation. We also provide you with regular and timely communication throughout the project, including antigen inventories, project milestones, monthly boarding reports, and other relevant testing data. This allows you to monitor the progress of your project and make informed decisions about antigen modification, protocol adjustments, downstream processes, or production scale-up.

We also offer additional testing services to our project clients, such as ELISA, Western blot, immunohistochemistry, affinity measurements, and more. These services can provide you with critical information about the specificity, sensitivity, and functionality of your polyclonal antibodies. Whether you need polyclonal antibodies for research, diagnostic, or therapeutic applications, LAMPIRE is your trusted partner for delivering reliable and customized solutions.

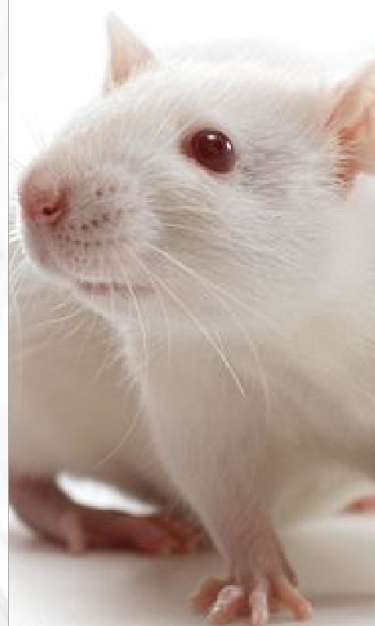




▶ ADDITIONAL SERVICES

- Antigen Preparation
- Assays Against Host Antigen
- Assays Against Target Antigens
- ELISA Testing
- Pre-Immune Screening
- Antigen Conjugation
- Titer Testing
- Antibody Purification
- Antibody Conjugation
- Buffy Coats (PBMCs)
- RNA Isolation
- Affinity Purification
- Splenectomies & Bone Marrow Collection
- For Use In Downstream Antibody Production Technologies (B-Cell Sorting, Phage Display)



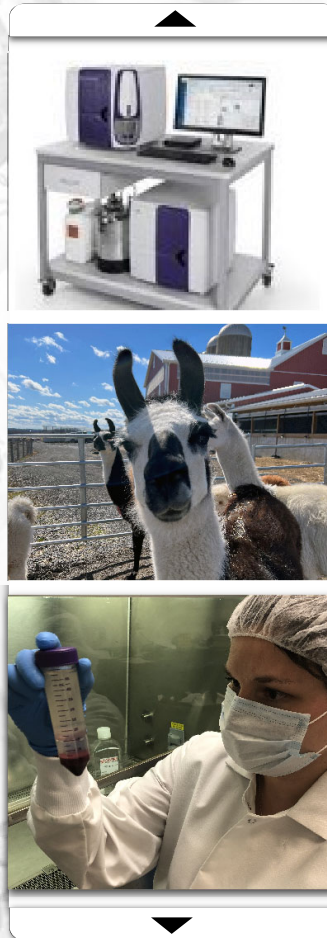


► CUSTOM MONOCLONAL

LAMPIRE offers a comprehensive line of monoclonal antibody services from research to bulk scale production, single B-cell recombinant approach, hybridoma development, cell line optimization, serum free antibody production, supernatant concentration, antibody purification and characterization, cell bank production, testing and storage.

- Mouse
- Hamster
- Guinea Pigs
- Rats



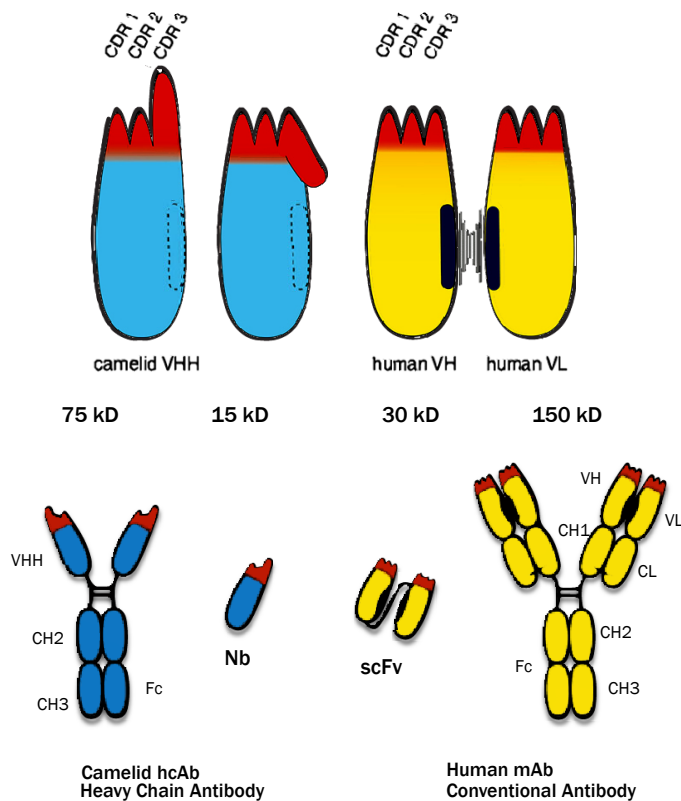


▶ MONOCLONAL ANTIBODY GENERATION, SINGLE B CELL APPROACH

- FACs sorting B-cells bound to labeled antigen
- Robust sampling of natural antibody repertoire
- Fastest timeline to sequence and screening recombinant monoclonal antibody on "FC of choice"
- Recovering VHH sequences from Immunized animals is less-complicated as compared to conventional mabs since they are derived from Homo-Dimeric BCRs rather than Hetero-Dimeric BCRs as in mice, rabbits and humans.
- Large quantities of PBMCs can be collected from Llamas and Alpacas across multiple timepoints during an immunization.



► ADVANTAGES OF VHHS



Structural Advantages:

- The CDR3 loop of a camelid VHH typically can be much longer allowing it to reach epitopes on target antigens inaccessible to conventional antibodies.
- VHH is its entirely hydrophilic framework, whereas a VH domain contains a hydrophobic side facing the VL domain (indicated in black). This may aid inclusion of vHHs into bi-specific antibodies and alternative formats.

Therapeutic Advantages:

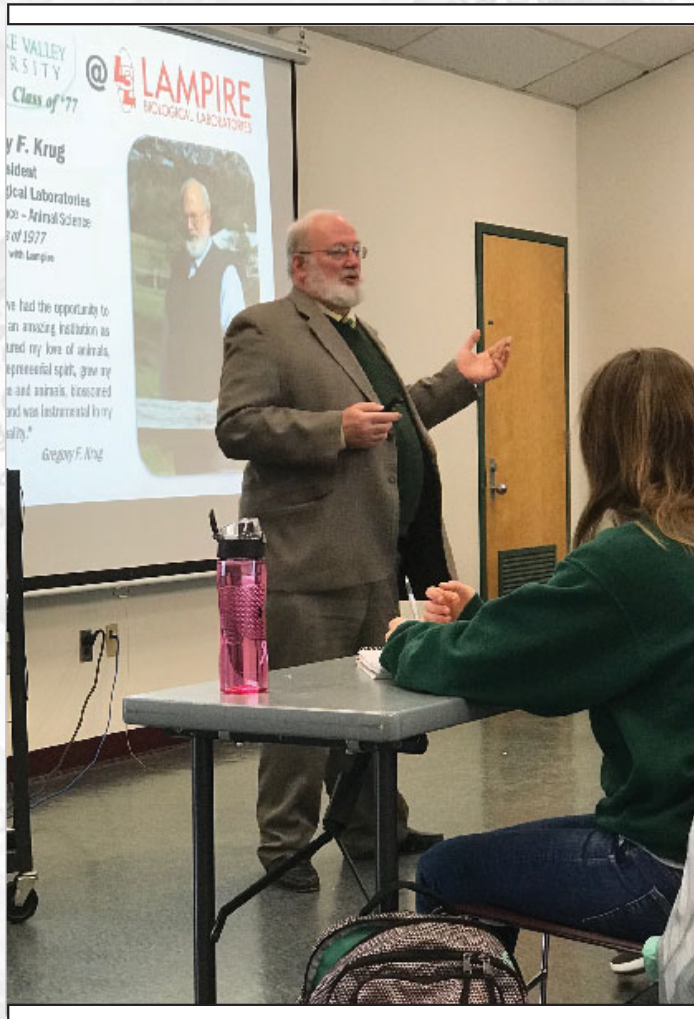
- Their nanoscale dimensions enable deep penetration of tumors (15kDa, Diameter: 2.5nm)
- Certain nanobodies able to cross the blood brain barrier (BBB)
- High affinity and specificity for their target antigens
- Modularity, can be used as soluble fragment or fused to FC or HSA or CAR-T receptors in bi- or multi-specific formats

Developability Advantages:

- High melting temperatures (60–80°C, several weeks at 37°C)
- Non-physiological pHs (3.0–9.0)
- Strong chemical denaturants (2–3 M guanidinium chloride, 6–8 M urea)

Manufacturing Advantages:

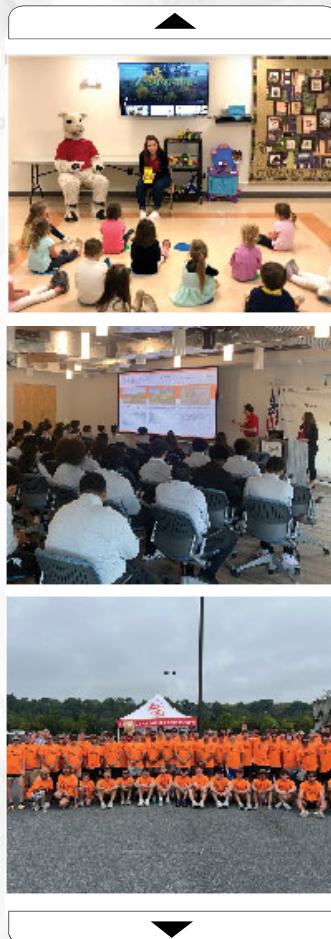
- Nanobodies are inexpensive to produce and can leverage existing manufacturing processes.
- Leverage standard Protein-A purification.
- Can be synthesized through microbial or mammalian expression systems



▶ BEYOND THE LABORATORY

LAMPIRE's impact on the community, particularly in the areas of preschool through high school and college education, as well as with teachers, is significant and multifaceted.

- *Educating on the Importance of Life Science: LAMPIRE educates students and the community about the significance of life sciences, inspiring an appreciation for the field.*
- *Inspiring the Next Generation: LAMPIRE inspires students to consider careers in life sciences, offering events, science fairs, and workshops.*
- *Working with Education Boards: Collaborating with education boards to shape curriculum and programs that align with the latest developments in life sciences.*
- *Supporting Program Availability: LAMPIRE supports programs by offering scholarships and grants for life science students.*
- *Tech Program Collaboration: Promoting interdisciplinary education at the intersection of life sciences and technology, preparing students for evolving careers.*
- *Volunteering to Teach: LAMPIRE experts volunteer to teach students directly, providing real-world insights into the industry.*
- *Supporting Teachers: Providing resources and training for educators to enhance life science teaching, creating more engaging classroom experiences.*



► BEYOND THE LABORATORY

Animal Care Program LAMPIRE offers a hands-on animal care training program for veterinarians, further contributing to the community by providing specialized training and expertise in veterinary care.

What's So Cool.... We make science engaging, with educational programs, including participation in the "What's So Cool About Manufacturing" initiative, inspiring the next generation and igniting a passion for learning.

Economic Collaboration We partner with local economic boards, striving for job creation, strategic investments, and a thriving local economy.

Community Support For over four decades, Team LAMPIRE actively enhances lives through initiatives like sponsoring local events, supporting charities, and volunteering.





▶ The LAMPIRE Advantage

Customer Focused: Technical Knowledge and Experience

More than 46 years of collaborating with the research, diagnostic and scientific industries worldwide. We work together with you from concept-to-completion. Our Project Management, Sales Associates, Customer Service Representatives and Technical Support personnel become part of your team.

World Class Specialized Facilities

State-of-the-art facilities designed with efficiencies and redundancies already in place to provide our expert techs every opportunity to make your project a success.

Quality Management System

Complete QMS Documentation System with certification to ISO 13485:2016. In addition to AAALAC, OLAW, and continuous process improvement systems consistent with our Quality Policy.

Expansive Product and Service Offerings with Customization Available

One stop for all your research needs. Our quality products and services can be customized to meet your specifications.

Beyond the Laboratory

LAMPIRE employees are passionate. Passionate about education, family, and community.