VIVA

WORLD LEADING ONE-STOP PLATFORM FROM SBDD TO COMMERCIAL DRUG DELIVERY

VIVA BIOTECH HOLDINGS
Stock Code: 1873.HK

World Leading One-Stop Platform from SBDD to Commercial Drug Delivery

VIVA

VIVA BIOTECH HOLDINGS (01873.HK)

Established in 2008, Viva Biotech (01873.HK) provides one-stop services ranging from early-stage Structure-Based Drug R&D to commercial drug delivery to global biopharmaceutical innovators. We offer leading early-stage to late-phase drug discovery expertise by integrating our dedicated team of experts, cutting-edge technology platforms, and state-of-the-art equipment in X-ray crystallization, Cryo-EM, ASMS, SPR, HDX, CADD, and much more. Our business covers all aspects of therapeutic strategies and drug modalities, including small molecules and biologics across the pharma and biotech spectrum. The experienced chemistry team, led by senior medicinal chemists and drug discovery biologists, provides services for drug design, medicinal chemistry (hit to lead and lead optimization), custom synthesis, chemical analysis and purification, kilogram scale-up, peptide synthesis and corresponding bioassays. With our subsidiary, Langhua Pharma, we offer our worldwide pharmaceutical and biotech partners a one-stop integrated CMC (Chemical, Manufacturing, and Control) service from preclinical to commercial manufacturing. Additionally, Viva embedded an equity for service (EFS) model to high potential startups to address unmet medical needs.

GLOBAL NETWORK

LANGHUA PHARMA

Langhua Pharmaceutical, a subsidiary of Viva Biotech Holdings, is a comprehensive pharmaceutical company engaged in drug research, development, and production. Langhua offers our worldwide partners a One-Stop CDMO solution in new drugs' entire full life-cycle for small molecule Active Pharmaceutical Ingredients (API) and Finished Dosage Form, from preclinical to commercial supply.

SYNthesis med chem

SYNthesis, a subsidiary of Viva Biotech Holdings, is a provider of small molecule drug discovery services. Their focus is on the provision of world class medicinal and synthetic chemistry. Synthesis fits seamlessly into a client' s company to add capacity and insight to their drug discovery programs, and work with your scientists to accelerate programs from hit-to-lead through to lead optimisation and beyond.

CRO Drug R&D Services

World Leading Structure-Based Drug Discovery (SBDD) Services

Biophysical Technology

SPR,TSA,HDX

State-of-the-art instruments

Full automation and high throughput capacity

PROTAC Platform

Researched over 50 E3 ligases

Delivered 100+ target proteins-PROTAC-E3 ligase ternary complex structures

Protein Production & Structural Biology

World-class and largest in operation

Cryo-EM Technology

CryoEM Single Particle Analysis

Structure determination at atomic resolution

Membrane Protein Targeted Discovery Technology

Proprietary Technology in GPCR/ Ion Channels/ Transporters

Hit Discovery Technology

HTS, ASMS, Intact-MS, SPR, Crystal Soaking, TSA, VS

Bioassay Platforms

Biochemical and cell based assays with advanced technologies

Computer-Aided Drug Design

Computational Chemistry, Biology

Medicinal Chemistry

PROTAC Molecular Synthesis, Chiral Synthesis and Separation, Catalytic Screening Technology, Polypeptide Technology, Light-catalyzed Reaction, Isotope Modification, RNA Synthesis (Under Construction), etc.

DMPK

ADME/PK

Therapeutic Antibody Discovery

Phage display technology

Hybridoma technology

Mammalian cell display technology

Nanobody(VHH) technology

CDMO R&D and Production Services

One-Stop Solution for Small Molecule Drug CDMO

API Services

Synthetic route design and selection

Process development & optimization

Tox batch manufacturing

API analytical method development and validation

API stability study

GMP manufacturing for Phase I, II, and III clinical trials

Scale-up and commercial manufacturing (mg to 1000 ton)

API CTD document preparation for NMPA, FDA, IND, and NDA filings

Drug Product Services

Pre-formulation study

Formulation & process development

Non-GMP pilot scale production

DP analytical method development and validation

Various dosage form developments

DP stability study

GMP manufacturing for Phase I and II clinical trials

DP CTD document preparation for NMPA, FDA, IND, and NDA filings

CRO Drug R&D Services

48,925+

Protein Structures Delivered in Total

1,878+

Independent Drug Targets Being Researched and Developed

1,617

Scientists and technicians

With its leading position in Structure-Based Drug Discovery (SBDD), Viva provides state-of-the-art drug research and development services to global biotechnology and pharmaceutical clients for their preclinical, innovative drug discovery programs. We cover the all-around needs of our clients for their early drug research and development, including protein expression, purification and structure determination, hit screening, therapeutic antibody discovery, antibody expression and production, bioassay, computer-aided drug design, medicinal chemistry and custom synthesis, ADME, and PK studies.

Discovery Biology Services

We efficiently carry out hit screening, MOA studies, Structure-Based Drug Discovery, and Fragment-Based Drug Discovery for global clients, and accelerate innovative drug discovery and development while reducing R&D costs.

Hit Discovery Platform

Diverse Library Screening Technologies: HTS, ASMS, VS

Fragment Library Screening Technologies: Crystal Soaking, SPR, ASMS, TSA, VS

Covalent Library Screening Technologies: Intact-MS

Compound Library: Multiple Fragment Library, GPCR-Focused Library, Diverse Library with 200K Compounds

Biophysical Technology

Protein Structural Study: X-ray, Cryo-EM (SPA、Micro-ED)

Binding Site Study: HDX-MS

Non-Covalent Binding Proportion Study: Native-MS

Non-Covalent Binding Identification and Screening: ASMS, Thermal Shift Assay (TSA), SPR

Non-Covalent Kinetic Study: SPR

Covalent Binding Identification and Screening: Intact-MS

Covalent Kinetic Study: Intact-MS

Covalent Binding Site Identification: Peptide Mapping MS

Chemistry Services

SYNthesis med chem

Our chemistry services are highly synergized with our discovery biology services, supported by a computer-aided drug design platform, and combined with medicinal chemistry to support design efforts. Our medicinal chemistry team has strong experience in innovative drug design and multiple computational chemistry methods to provide CADD and method development for chemical and protein drugs, featured enhanced molecular dynamics sampling and free energy calculations, and much more.

Medicinal Chemistry

Discovery and Optimization of Hit Compounds, Structure and SAR Guided Compound Design

Synthetic Chemistry

Synthetic Route Design, Compound Library, Non-GMP Kilo Scale-Up

Analytical Chemistry and Purification Preparation

LCMS, HPLC, 1D and 2D NMR Analysis, Chiral Synthesis and Separation

Compound Types

Macrocyclic Compounds, Heterocyclic Compounds, PROTAC, Nucleotides, Peptides, Deuterium Containing Compounds

Technology Platform

Catalytic Screening Technology, Polypeptide Technology, Light-Catalyzed Reaction, Isotope Modification, and much more

Antibody Drug R&D Services

We have a high-level professional team (70% of which hold a masters and above) focused on preclinical antibody drug discovery. We possess various antibody discovery platforms such as hybridoma, phage display, mammalian display, immunized alpaca or camel nano antibody, rabbit monoclonal antibody, and more. We provide one-stop services in antibody R&D from target antigens to functional antibody candidates for domestic and international pharmaceutical and biotechnology companies.

Antigen Design, Preparation, and Identification

Discovery of Multi-Species Monoclonal Antibodies

Functional Screening and Identification of Antibodies

Antibody Engineering Transformation

Antibody Efficacy Evaluation In Vitro

PROTAC Drug R&D Services

Protein Preparation and Ternary Complex Structure Determination
(X-ray & Cryo-EM, >50 E3 ligases, >100 target protein-PROTAC-E3 ligase ternary complex structures)

Screening for Molecule Glues and Novel E3 Ligase Ligands
(ASMS, SPR, Crystal Soaking, etc.)

PROTAC Ternary Complex Kinetics (SPR)

PROTAC Degradation Assays and Ternary Complex Assays

PROTAC Molecule Design and Synthesis

ADME & PK/PD Studies of PROTAC Molecules

Computer-Aided PROTAC Design

CDMO R&D and Production Services

As the subsidiary of Viva Biotech Holdings, Langhua offers our worldwide partners a one-stop CDMO solution in new drugs' entire full life-cycle for small molecule Active Pharmaceutical Ingredients (API) and Finished Dosage Form, from pre-clinical to commercial supply.

860m³+
Production capacity

13,000m²
Laboratory area

300+
Scientists and R&D staff

852
Clients

One-Stop CMC/CDMO Service Capability

Langhua operates three R&D centers in Shanghai, Ningbo, and Taizhou; 15+ years of experience in collaboration with major international pharmaceutical companies.

From CMC research, Sino-US dual IND filing, clinical supply manufacturing under GMP condition, and NDA application to commercial product manufacturing.

GMP and EHS Compliance

Our factories have multiple GMP certifications:
- 11 Certificates (US-DMF, EU-GMP, WHO—PQ, CEP)
- 14 Passed Inspections (FDA、EDQM、WHO、ANVISA、PMDA、NMPA)

Passed PSCI' s EHS inspection and certified in multiple systems, such as ISO14001, 45001, EcoVadis (Silver), etc.

First-Class R&D Team, Equipment, and Diversified Technology Platform

Technical team experienced in R&D, manufacturing, and registration;

Experienced at solving problems such as long synthesis route, high cost of goods, complex synthesis, and long cycle of API or starting materials and intermediates using various novel synthesis techniques, including technology platforms such as flow chemistry, biocatalysis, photoredox reaction, metal catalyzed coupling reactions, etc.

Provide oral drug product formulations and other drug product technology platforms, solve the problem of insoluble compounds or poor stability, and provide a variety of controlled releases, formulation development, and manufacturing solutions.

API Services

We offer integrated services to worldwide partners for small molecule Active Pharmaceutical Ingredients (API), from pre-clinical to commercial supply.

Process Development

Manufacturing

Process Safety Assessment

API Technology Platform

Hazardous Chemistry

Hydrogenation

Enzymatic Reaction

Green Chemical Process

Micronization

Photoredox Reaction

Chiral Chemistry

Flow Chemistry

Metal Catalyzed Coupling Reactions

Drug Product Services

We provide formulation development and production services from preclinical to clinical phase II

Pre-Formulation Study

Clinical Formulation Development Service

Drug Product Manufacturing

Drug Product Technology Platform

Bioavailability Enhancement Drug Delivery

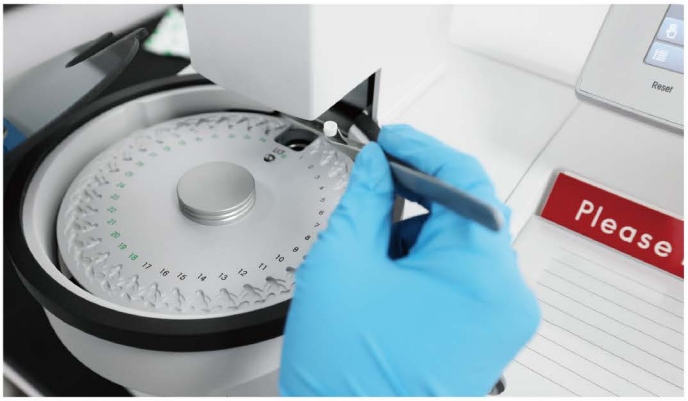
Control Released Drug Delivery

Complex Injectable Drug Delivery

Pediatric Drug Delivery

Analytical Services

We provide a full range of pharmaceutical analysis services to global clients.



API Analysis Service

Pre-Formulation Analysis Service

Drug Product Analysis Service

Stability Study

Data Integrity

Support

We have an experienced registration team to provide global clients with CMC filing, global filing registration support, and other services.

Global CMC Filing

Project Management

Product Lifecycle Management

EFS Investment & Incubation Business

215
Pipelines in Total

91
Portfolio Companies

Viva Biotech combines conventional cash for service (CFS) and unique equity for service (EFS) business models, maintaining steady cash in flow from short-term drug discovery services while realizing massive revenue from long-term investments in drugs incubation. As the investment division of Viva Biotech Holdings (1873.HK), we are committed to being a collaborative platform for Innovative Biotech companies from around the world.

Our Investment Strategy

Groundbreaking Innovation
The "idea" needs to be differentiated and address true unmet medical need or technological challenges.

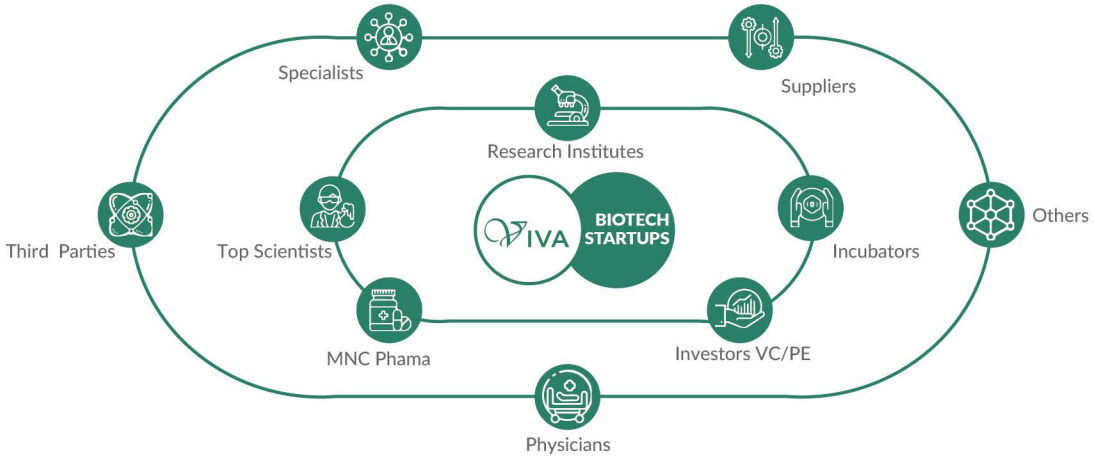
Strong Team
The founder and management team should have strong integrity, a track record of company building, and broad experience in drug R&D.

Commercial Viability
There must be significant patient impact and strong market potential 5-10 years in the future.

Strategic Fit
Our focus is early-stage therapeutics with a preference to invest in a combination of cash and in-kind services for each company.

Our Ecosystem

VBI continues building and optimizing the biomedical ecosystem while enhancing open cooperation platforms. Viva Biotech launched activities like the Annual Partnership Summit and Demo Day to encourage an open, creative atmosphere for Viva incubators.



Our Advantages — Optimized Incubation Platform

Viva BioInnovator works with some of the world's brightest minds to help discover novel and life-changing therapeutics. We can assist our portfolio companies through several avenues, including CRO services, financial support, access to experts, industry networks, back-office operations, and more. We continuously seek innovative ideas and set no restrictions on the indication, drug type, or company location.

CRO & CDMO Services

Our leading CRO platform is productive and efficient

One-stop solution for small molecule drug CDMO

Experts

Business Partners (experts in business operation and compliance)

Venture Advisors (experts in science and drug development)

Operation

Lab and office locations in Shanghai, Jiaxing, Chengdu, Hangzhou, Boston, San Diego, etc.

"Back-office" support (HR, Accounting, Procurement, BD, Financing, etc.)

Industry Network

Assistance in procuring internal or external resources (MNC R&D, B&D)

Will alert founders to changes in market dynamics

Capital

Average time to invest: 2 months

Introductions for later-stage funding and financial advice

Overview of Portfolio Companies

Oncology

Focus Therapeutics, Iterion, regla gene, TOTIENT, ABMTX, Telo, NERIO THERAPEUTICS, EubulusBio, Previva Therapeutics, SYNTHIS, CYBREXA, WMT, ARGONAUT genomics, EPN, DEKA BioSciences, SISU PHARMA, INC, FUSEBIO, Triumvira, GH 勤浩医药, tatara therapeutics, NAKI THERAPEUTICS, PHENOMIC.AI, EXARTA THERAPEUTICS, f5 Therapeutics, flash therapeutics, Amberstone BIOSCIENCES, ALETA BIOTHERAPEUTICS, BIOCAST, DOMAIN THERAPEUTICS, 启愈, APEIRON, FULLCIRCLES therapeutics

Neurology

VersaPeutics, AmacaThera, Bonti, GurAlis, Blue Oak PHARMACEUTICALS, Ribogenics, VINCERE, evecxia therapeutics, AcuraStem, AceL, DTX PHARMA, MEBIAS DISCOVERY, PathTherapeutics, grove BIOPHARMA, ophidion

Cardiovascular

RIPARIAN PHARMACEUTICALS, HAYA Therapeutics, Basking Biosciences

Metabolic

TABOMEDEX BIOSCIENCES, Jing, FORKHEAD, ANJI PHARMA, DOGMA THERAPEUTICS, i2 THERAPEUTICS, Arthrosi THERAPEUTICS, INC., ANTAG THERAPEUTICS, Regenacy Pharmaceuticals, seraxis

Dermatology

TECHNODERMA, MorphoGene, Ornovi

Immunology

MEDIAR THERAPEUTICS, Elgia therapeutics, I-MAB BIOPHARMA, saverna therapeutics, KARMA BIOTECHNOLOGIES, IpiNovyx, DORIAN THERAPEUTICS, AIxplorerBio 索智生物

Infectious

WEIQING, BRIGHT ANGEL THERAPEUTICS, XLEMENT, ARREPATH

Ophthalmology

Business Conduct and Ethics

Viva Biotech attaches great importance to protecting client information and intellectual property. We continuously optimize the quality management system, we always uphold the business ethics of honesty and trustworthiness, legal compliance and integrity, and we strictly comply with laws and regulations related to corporate governance and the Corporate Governance Code. In addition, we strictly comply with the environmental management systems.

Information Security Management

Viva attaches great importance to protection of customer information and trade secrets. In strict compliance with the relevant regulations on information security and privacy protection, the Group has established an information security team, strict information management system, and computer management system.

Protection of Intellectual Property Rights

Intellectual property rights constantly empower Viva Biotech's innovation and development. Viva firmly implemented the Intellectual Property Rights Protection Measures, strictly following the Patent Law of the People's Republic of China and the Trademark Law of the People's Republic of China. During CDMO business processes, Langhua is committed to protect customer's confidential information and Intellectual Property strictly.

Quality Management System

Viva Biotech has always paid close attention to effective service quality improvements. The Group strictly abides by relevant laws and regulations and has obtained ISO 9001:2015 quality management system certification. During CDMO business processes, Langhua complies with cGMP & ICH Guidelines and maintains a good track record.

Compliance and Business Ethics

Viva Biotech upholds the business ethics of honesty and trustworthiness, legal compliance, integrity, and self-discipline, acts in strict accordance with relevant laws and regulations on corporate governance and the Corporate Governance Code, and demonstrates zero-tolerance for bribery, extortion, fraud, and money laundering.

EHS System

Viva adheres to sustainable development in daily operations and takes corporate responsibility very seriously for reducing greenhouse gas emissions. During CDMO business processes, Langhua established the EHS system following the requirements of ISO 14001, ISO 45001 and applicable national laws and standards.

Facilitating the R&D and Production of Innovative Drugs and Empowering Global Partners

Advanced Technology

World-leading technology platform

Proven technology with numerous successful cases

Flexible Cooperation

FTE (Full-Time Equivalent), FFS (Fee-for-Service), and Risk Sharing- various models to adapt to different clients' needs

First-Class Service

Good communication

Timely reporting of research results

Help clients solve R&D difficulties and provide solutions

Comprehensive Service Platform

A wide-ranging service company from R&D to production

A comprehensive application platform with various early R&D technologies

R&D platform for comprehensive production and formulation processes

International Professional Management Team

More than ten years of overseas study and work experience

Familiar with innovative drug R&D technology and processes, and has rich experience in innovative drug R&D management

Data updated until 2022.6.30

2,076

Biotech and pharmaceutical clients worldwide

2,601

Employees worldwide

66

Domestic and foreign patents

91

Invested and incubated companies

Distributed in Shanghai, Jiaxing, Suzhou, Hangzhou, Ningbo, Taizhou, Chengdu and more to effectively diversify risks

Zhoupu, Shanghai

Zhangjiang, Shanghai

Jiaxing, Zhejiang

Suzhou, Jiangsu

Hangzhou, Zhejiang

Ningbo, Zhejiang

Taizhou, Zhejiang

Chengdu, Sichuan

CUSTOMER SUCCESS, WIN-WIN COOPERATION

To Become a Long-Term Partner for Global Innovative Biotech Companies

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