



COMPANY MP SOLUTION PROFILE

Transforming *RESEARCH* into *REALITY*

www.MPsoln.com



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About Company

Founded in 2022, aims to revolutionize the biopharmaceutical landscape by making it **easier** and **more cost-effective** for researchers to bring their **innovative** therapies to market.

We envision a future where life-saving treatments are **more accessible**, and the process of drug development is **significantly accelerated**.

- **Molecular Pharming Solution Co. Ltd.**





About Vision

To be the leading partner in translating groundbreaking research into transformative therapies, accelerating the journey from discovery to market.



About Mission

Empowering researchers by providing cutting-edge molecular pharming solutions, ensuring efficient, cost-effective, and scalable production of therapeutic proteins and biologics.





Why Choose Us?



P

Professional

Highlights the team's proficiency, reliability, and commitment to excellence in CDMO and CRO services, ensuring successful project execution.

E

Experience

Demonstrates proficiency in CDMO and CRO services, including clinical trial operations, regulatory compliance, and drug development.

A

Agile

Agile focuses on results over processes and documentation for achieving the most effective product and service development

*"We have our **BaiyaPharming™** technology, offering clients cutting-edge and efficient solutions for biopharmaceutical development and manufacturing."*



Our Service

CDMO



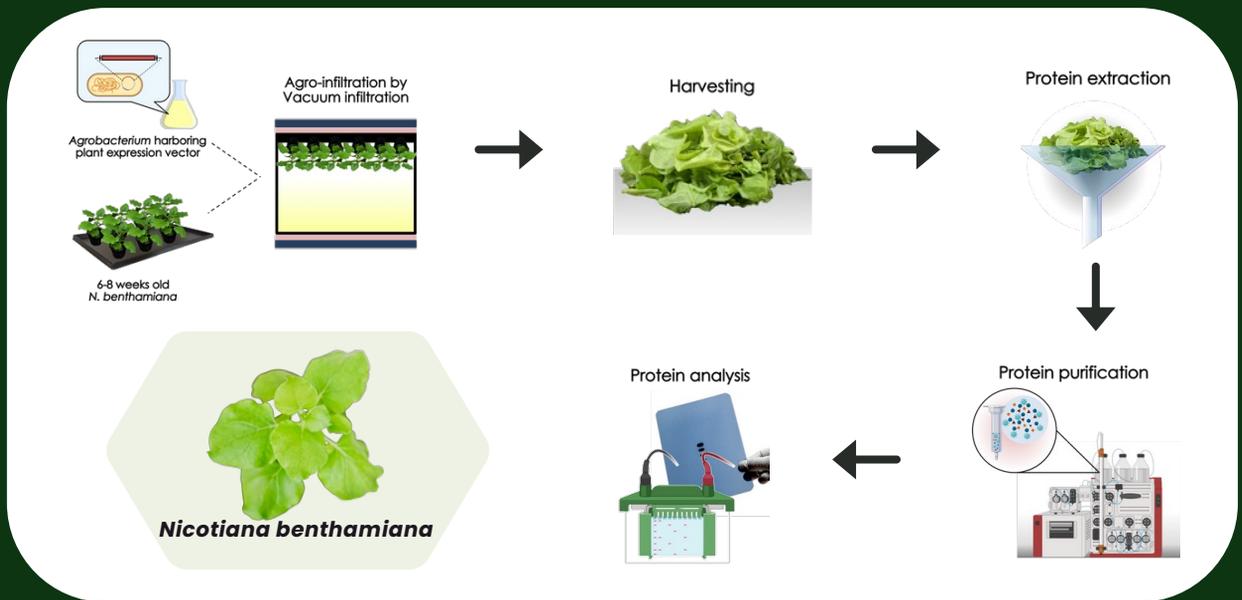
MP Solution utilizes the **BaiyaPharming™** platform and **GMP-certified facility** to drive innovation and revenue in plant-based protein manufacturing. It seeks partnerships with pharmaceutical, biotech, and research organizations for **process development, scale-up, and production**, ensuring financial stability.



With expertise in GMP-compliant protein production, MP Solution offers **flexible and sustainable solutions** tailored to client needs. By fostering long-term partnerships, it positions itself as a trusted **CDMO in plant-based technology** and beyond.

BaiyaPharming™ provides a **competitive edge** with advanced, **regulatory-compliant** protein production. Backed by a **strong quality system and marketing strategy**, MP Solution ensures reliable CDMO services for industry growth.

Our BaiyaPharming™



BaiyaPharming™ platform has the flexibility to produce biopharmaceutical products of interest within weeks rather than months or years, resulting in a faster process, lower cost of research and development for products, such as cosmetic raw materials, diagnostic test kit materials, including the complex therapeutics for cancer and infectious diseases.

We have been scaling up our platform from scratch to hatch within our tiny laboratory since its founding in 2018. Currently, we established a cGMP facility in Bangkok, Thailand, to produce the clinical materials of plant-produced proteins, with the capacity of a production of COVID-19 vaccine up to 5 million doses per month.

During the passing years, our team combines deep technology expertise in plant biotechnology; biopharmaceutical production, and clinical development all together. This powerful collaboration drives the generation of a broad proprietary portfolio of the biologic candidates, advancing and strengthening our pipeline. Our visions are to be a global leader and front runner of innovation and excellence using the plant-based technology platform. We aim to change people's lives by leading the biotech ecosystem forward by being agile, highly networked and committed to the core values.

Our

Facilities & Utilities



Purified Water System

- Capable of generating up to 250 L/hr of Purified Water (PW) for use in all production processes.
- The water undergoes routine monitoring to ensure it meets cGMP and industry standards.



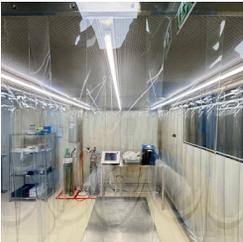
Heating, ventilation, and air conditioning (HVAC) system

- The facility maintains Grade D air quality, strictly adhering to ISO 14644, ISPE, PDA, and NEBB guidelines.
- The HVAC is designed to have controls that manage particulate levels and airflow, minimizing contamination risks and ensuring a stable environment for sensitive manufacturing operations.



Building Automation System (BAS)

- BAS monitors and maintains temperature, humidity, and differential pressure in real time.
- Continuous tracking of critical parameters ensures that any deviations are swiftly corrected, maintaining a compliant and stable production setting.



Waste Management System

- Standardized Chemical Waste Treatment System manages and processes hazardous waste actively.
- High-capacity as 8,000-Liter Chemical Waste Tank.

OUR

CERTIFICATES



PIC/S GMP Certification
(Since Feb 22, 2023)

Certified by the Thai FDA under PIC/S GMP and GDP for the production, QC, and batch certification for Phase I/II trials.



ISO 9001:2015
(Since Dec 21, 2023)

Certified by TÜV NORD CERT GmbH according to ISO/IEC 17021-1:2015, covering plant cultivation, seed harvesting, and distribution.



Halal
(on progress)

In the process of submitting documents for Halal certification to the Central Islamic Council of Thailand.

CORE EQUIPMENT



BAIYA'S CUSTOM-DESIGNED TECHNOLOGY Hydroponic Tower with Automated Control System

- Used for seeding and cultivating *N. Benthamiana* in a controlled hydroponic environment
- **Capacity:** Total 12 tower producing up to 240 kg biomass per month



KOREA MEDIALAB™ VS-8480SRN Shaking Incubator

- Designed for Agrobacterium cultivation, essential for plant infiltration
- **Capacity:** 9 liters per day, capable of processing up to 600 kg biomass per month



BAIYA'S CUSTOM-DESIGNED TECHNOLOGY KE-800S infiltration machine

- Facilitates the infiltration of Agrobacterium into *N. Benthamiana*, a critical step in transient expression
- **Capacity:** 8 kg biomass per hour, supporting up to 5,760 kg of biomass per month



CYTIVA ÄKTA pilot 600 chromatography system

- Used for seeding and cultivating *N. Benthamiana* in a controlled hydroponic environment
- **Capacity:**
 - Flow rate: 600 ml/min
 - Purification throughput: 21 kg biomass/hr (35 liters of crude extract/hr) supporting up to 25,920 liters of crude extract per month

CORE EQUIPMENT



CYTIVA ÄKTA flux™ 6 tangential flow filtration system

- Enables buffer exchange and protein concentration through ultrafiltration
- **Capacity:**
 - Flow rate: 6000 ml/min (depending on membrane type)
 - Handles volumes from 0.1 L to 20 L, supporting up to 259,200 liters of purified protein per month



PERKIN ELMER MICROPLATE READER: Ensight™, Multimode, Perkin Elmer

- Used for high-throughput detection and quantification of biomolecules in various assay formats, including fluorescence, absorbance, and luminescence.
- **Capacity:** Supports 96- and 384-well plates, processing thousands of samples daily with multimode detection and integrated imaging for enhanced versatility.



GE Healthcare Bio-Sciences AB CCD imager: GE Healthcare ImageQuant LAS 500

- Designed for sensitive and high-resolution imaging of chemiluminescent Western blots, fluorescent protein and DNA gel stains, and colorimetric stains and markers.
- **Capacity:** Supports imaging of samples up to 105 x 105 mm in size, with a dynamic range of 4.8 orders of magnitude, enabling quantitative detection of high- and low-abundance proteins.



WATERS™ ACQUITY ARC BIO UHPLC SYSTEM

- Designed for precise measurement of total organic carbon (TOC) in aqueous samples, applicable to a wide range of water qualities, from ultrapure to highly contaminated water.
- **Capacity:** Supports a flow rate of 0.001–5.000 mL/min at a maximum pressure of 9,500 psi. with a total capacity of up to 768 sample using 96- or 384-well plates.



CORE EQUIPMENT



BECKMAN COULTER Centrifuge Avanti JXN-26

- Used to separate debris from crude extracts in the purification process
- **Capacity:** 10 liters per hour, supporting up to 7,200 liters of crude extracts per month



SHIMADZU Total Organic Carbon Analyzers: TOC-LCSH

- Designed for precise measurement of total organic carbon (TOC) in aqueous samples, applicable to a wide range of water qualities, from ultrapure to highly contaminated water.
- **Capacity:** Supports 10–2,000 μL sample injection, with a 4 $\mu\text{g/L}$ detection limit for TC and IC measurements, and a approximately 3-minute measurement time per sample.



AGILENT LC-QQQ Mass spectrometer (AGILENT 6495)

- Used for highly sensitive and selective quantification of small molecules, peptides, and metabolites in complex biological samples.
- **Capacity:** Analyzing up to 500 samples per day, with attomolar sensitivity for targeted quantification.



AGILENT LC-QTOF Mass spectrometer (AGILENT 6545XT)

- Used for high-resolution, accurate mass analysis of complex biological samples, enabling metabolomics, proteomics, biomarker discovery, metabolite identification and protein characterisation.
- **Capacity:** Analyzing up to 100 samples per day, with a mass resolution of $>40,000$ and a dynamic range suitable for detecting low-abundant proteins and metabolites.

Our Service

CRO



MP Solution is a **leading CRO partner** with a proven track record in supporting **clinical research and regulatory compliance**. With deep industry expertise, we help pharmaceutical, biotech, and research organizations navigate complex clinical landscapes with confidence. Our commitment to **precision, quality, and efficiency** ensures that every project meets the highest scientific and regulatory standards.



Backed by a team of experts, MP Solution delivers **strategic and data-driven solutions** tailored to each client's needs. We focus on building long-term partnerships, offering **reliable and flexible support** to accelerate research and development. With our experience and dedication, we empower clients to achieve their clinical and regulatory milestones efficiently and effectively.

Health Market Strategy

1 Health policy & Reimbursement

- Health economics and outcome research (HEOR)
- Discrete Choice Experiment (DCE)
- Scoping review and Systematic review of policy research
- Strategic analysis of health policy & reimbursement

2 Patient engagement

Understanding the patient journey through insightful analysis and developing engagement strategies to enhance the patient experience.

3 Market intelligence

Comprehensive research, financial assessment, and strategic planning for market success.

Core Solutions

1 Protocol design & development

Developing well-structured and scientifically sound research protocols to ensure study success.

3 Data analysis

Conducting rigorous statistical analysis to ensure reliable and valid research outcomes.

2 Document related to trial

Handling essential trial documents with accuracy and compliance to regulatory standards.

4 Study report

Preparing comprehensive study reports that meet regulatory and scientific standards.

Clinical Service

Regulatory Service

1 Feasibility & Gap Analysis

In-depth regulatory review and gap analysis for process optimization.

2 Product Registration & Licensing

Efficient management of product approvals and licensing applications for swift market access.

3 Quality & Compliance Documentation

Professional quality documentation and rigorous standards certification.



Our Executive



Jompong Champaiboon **Chief Executive Officer (CEO)**

With a passionate vision for innovation, Jompong is dedicated to creating superior products.

A graduate of Chulalongkorn University's Faculty of Engineering, his diverse expertise empowers him to revolutionize Thailand's biopharmaceutical industry.

He strives to drive the company to its full potential, crafting unique, quality products that reflect his passion. Our products are tailored to ensure consumer satisfaction.

Kitti Jirananon

Chief Operating Officer (COO)

Kitti is a transformative leader driving pharmaceutical production advancements at both Baiya Phytopharm and MP Solution. Joining Baiya Phytopharm in 2021, he established the GMP manufacturing system, evolving the company from a small lab to a growing manufacturer.



His ability to unify diverse teams propelled production efficiency. As COO of MP Solution, he views challenges as opportunities for optimization. With expertise in GMP facility construction, Kitti significantly enhances production capabilities and fosters organizational growth in both companies."



Our Partner

*"Powering success through
strategic partnerships.
Together, we achieve more."*



Unlock your business potential
with our strategic alliances

MedResNet



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