



Hunan Huateng Pharmaceutical Co., Ltd

One-stop CDMO to meet your needs for pharmaceutical molecules.

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Hunan Huateng Pharmaceutical Co. Ltd.

Founded Date : August, 2013

Address : Headquarter— National high-tech zone, Changsha, Hunan, China

Manufacturing base —Tongguan Kiln, Wangcheng district, Changsha, Hunan, China

Business : PEG derivatives and research chemical reagents;

CDMO for APIs and pharmaceutical intermediates.

Employees : 400+ full time staff, approximately 60% are Ph.D.'s and MSc's

Financial status : Series A financing led by Boyi Fund, a subsidiary of Tasly Capital,
Series B financing led by CITIC Securities



HISTORY

2013

Officially operated
in Changsha



2016

Launched First
R&D Center



2020

Factory was completed
and put into production



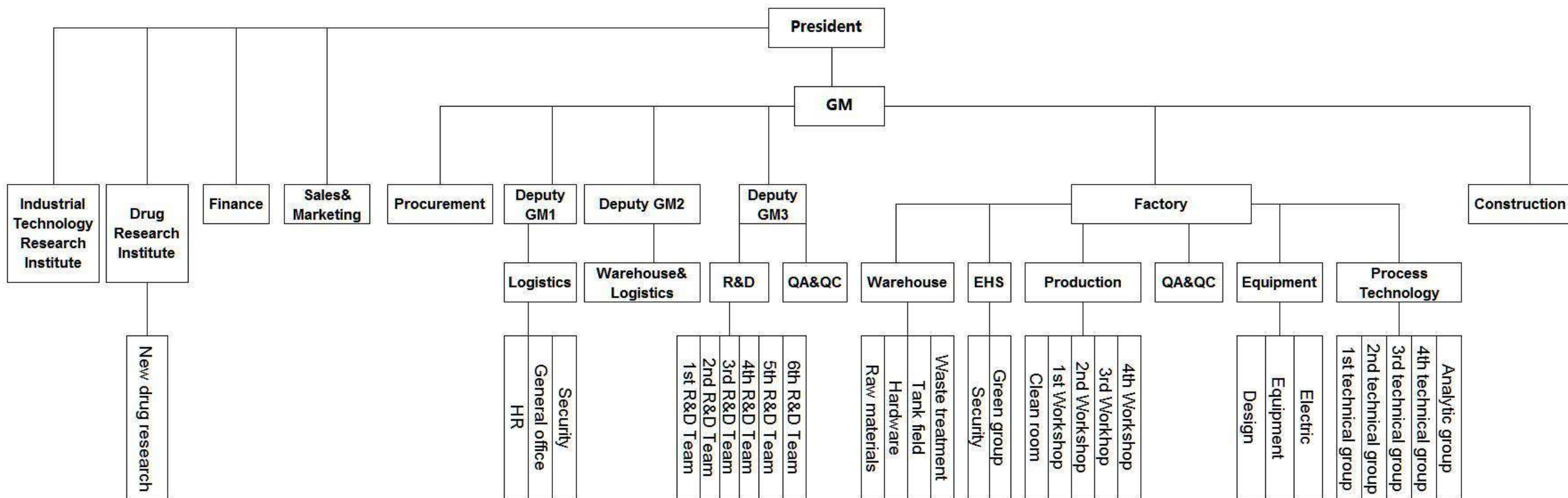
2021

Set up Biopharma PEG
in USA



Biopharma PEG

Organization Chart



Safe Production License

- Effective from: August 12, 2021
- Valid till: August 11, 2024



Qualifications



National High-tech Enterprises Certification



Hunan Engineering Research Center for sustainable release and long acting medicine



Hunan Academician Expert Workstation



Hunan cooperative R&D center of Postdoctoral programme



National Technological Innovation and Entrepreneurship Talent honored to Dr. Deng zeping



National Intellectual Property Advantage Enterprise

2. Excellent R&D Capability

Highly Educated
R&D Team



Industrial Technology
Research Institute

Drug Research Institute

Highly Educated R&D Team

Researchers: 200+

PhD: 15

Master: 60



Drug Research Institute

R&D of chemical generics,
long-acting targeted innovative
drugs & biological drugs.



Industrial Technology

Research Institute

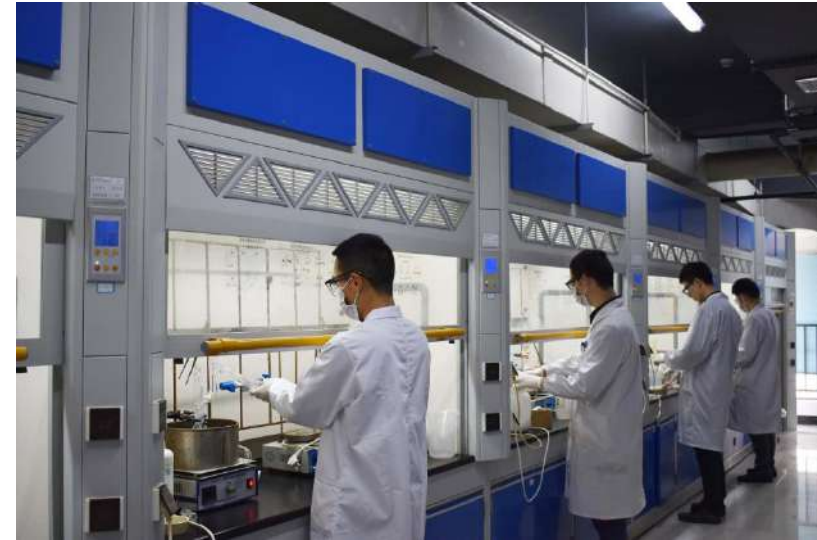
R&D of PEGylated peptides and
protein-based drugs, new class I target
drugs, the Green manufacturing of
specialty APIs.



50+ Granted Patents, 40+ Patents Under Application



Well-equipped Laboratories



Precision Testing Equipment



400 MHz NMR system



Agilent LC/MS



Waters HPLC



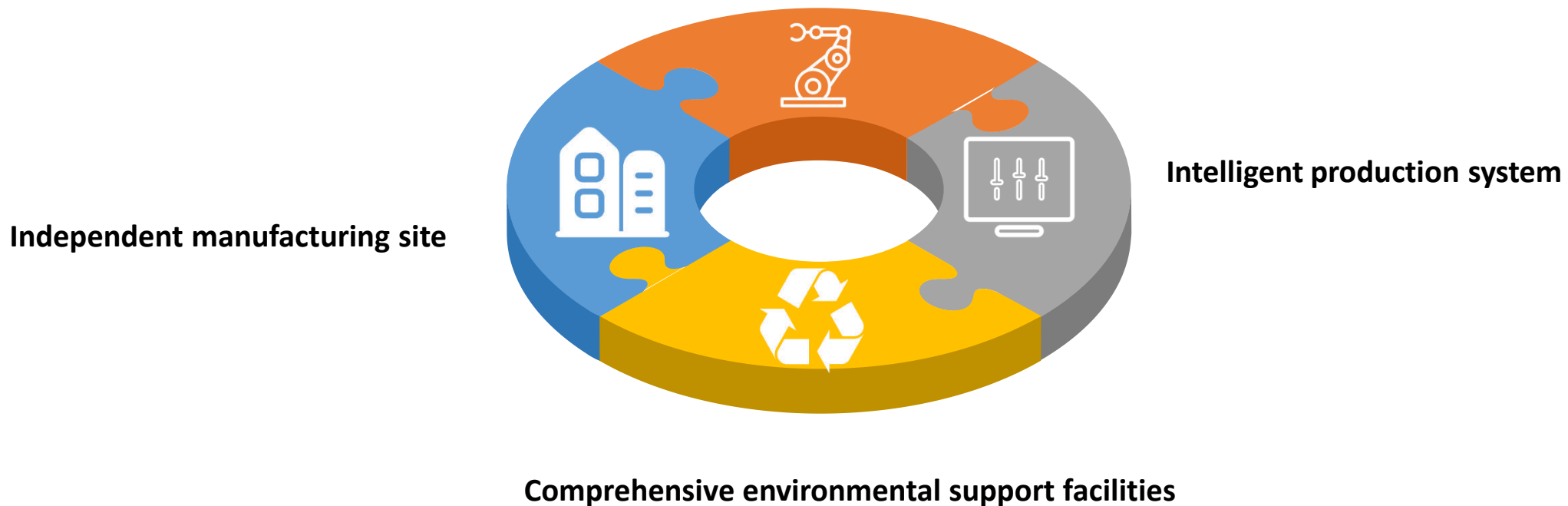
Gel Chromatograph



Infrared analyzer

3. Strong Production Capability

800+ sets of advanced facilities





Manufacturing Site

Address: Tongguan Kiln, Wangcheng district, Changsha, Hunan, China

Area: 34,000m² , putting into operation since August, 2020.

Product: lab scale to pilot plant to full-scale production of PEG Derivatives, APIs and intermediates and other chemical reagents.

Annual Output Value: RMB 1 billion.

Four Workshops

Four buildings with a total of 20,000 square meters of modern multifunctional production workshops.

First & second workshop: Put into operation in August 2020

Third & fourth workshop: Begin trial production in April 2022



GMP Standard Plant



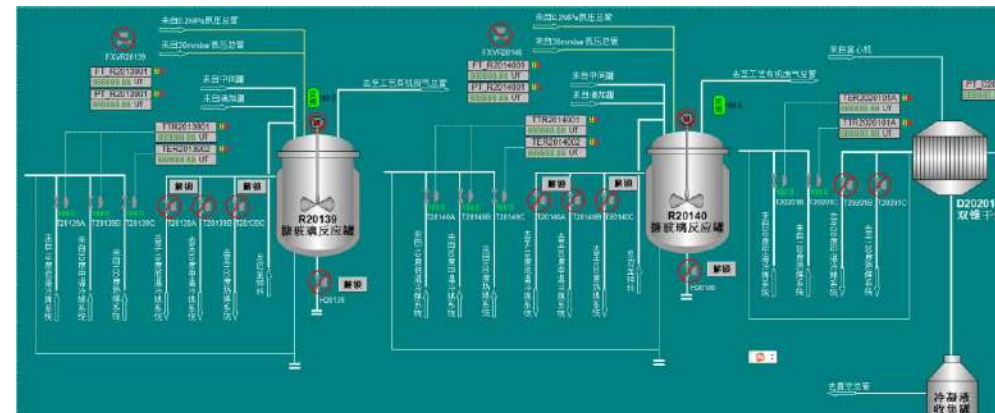
Large Scale Manufacturing Capability



Intelligent Production System



System control center



Distributed Control System (DCS) main interface



DCS & SIS system equipment room



DCS & SIS control console



Safety Instrumented System (SIS) main interface

Equipment List of Workshops

No	Name of Equipment	Capacity	Quantity
1	Hydrogenation Reactor	2000L	2
2	Amination Reactor	2000L	1
3	Liquid Nitrogen Low Temperature Reactor	2000L	4
4	Stainless Steel Reactor	1000L	1
5	Stainless Steel Reactor	2000L	2
6	Stainless Steel Reactor	3000L	1
7	Stainless Steel Reactor	5000L	12
8	Enamel Reactor	500L	2
9	Enamel Reactor	2000L	21
10	Enamel Reactor	3000L	31
11	Enamel Reactor	5000L	92
12	Pilot Plant Enamel Reactor	200L	2
13	Pilot Plant Enamel Reactor	300L	3
14	Pilot Plant Enamel Reactor	500L	4

Equipment List of Workshops

No	Name of Equipment	Capacity	Quantity
1	Pilot Plant Stainless Steel Reactor	500L	1
2	Pilot Plant Enamel Reactor	1000L	4
3	Pilot Plant Stainless Steel Reactor	1000L	1
4	Pilot Plant Double Cone Vacuum Dryer	1000L	2
5	Pilot Plant Centrifuge	600	2
6	Enamel Rectifying Still	300L	2
7	Enamel Rectifying Tower	φ200*10000	2
8	Enamel Rectifying Still	5000L	4
9	Stainless Steel Rectifying Tower	φ400*10000	2
10	Enamel Rectifying Tower	φ400*10000	2
11	Enamel Rectifying Still	2000L	1
12	Enamel Rectifying Tower	φ400*10000	1
13	Stainless Steel Rectifying Still	3000L	1
14	Stainless Steel Rectifying Tower	φ400*10000	1

Equipment List of Workshops

No	Name of Equipment	Capacity	Quantity
1	Double Cone Vacuum Dryer	2000L	12
2	Double Cone Vacuum Dryer	3000L	2
3	Top Discharge Centrifuge	800	1
4	Top Discharge Centrifuge	1250	2
5	Top Discharge Centrifuge	1250	1
6	Flat Plate Bottom Discharge Centrifuge	LGZ1250NF/303	6
7	Flat Plate Bottom Discharge Centrifuge	LGZ1249HF	4
8	Decanter Centrifuge	450	2
9	Decolorization Reactor	2000L	1
10	Decolorization Reactor	500L	1
11	Clean Room Crystallization Reactor	2000L	1
12	Clean Room Crystallization Reactor	500L	1
13	Clean Room Double Cone Vacuum Dryer	1000L	1
14	Clean Room Centrifuge	600	1

Equipment List of Workshops

No	Name of Equipment	Capacity	Quantity
1	7°C Water Chiller	MCW1100	1
2	7°C Water Chiller	MCW7200	1
3	7°C Water Chiller	490Kw	1
4	7°C Water Chiller	720KW	1
5	-15°C Evaporative Water-Cooled Screw Chiller	980KW	3
6	Dual Stage Falling Film Evaporators	20m ² (φ400*3100)	3
7	Exhaust Gas Treatment Spray Tower	φ1200*5000	8
8	Cooling Tower	450m ³ /h	4
9	PM Inverter Screw Air Compressor	SL75	2
10	Power Frequency Screw Air Compressor	IRN75	1
11	Nitrogen Generator	BPN/TYN-300-99	2
12	RTO	15000m ³ /h	1
13	Wastewater Treatment	500m ³ /d	1

High Standard Warehouse Storage

- 2 Class A warehouses of 750m²
- 1 class C warehouse of 3600m²
- 12 storage tanks of 50m³



Perfect QA & QC Management System



Comprehensive Quality Management



Huateng's new cGMP standard plant came into operation in Aug. 2020. Due to the COVID-19 pandemic, the certifying procedure is kind of delayed.

- ISO 9001 issued;
- ISO14000, and OHSAS18000 certifications are under approval ;
- The GMP certification is expected to be available in the 3rd quarter of 2022.

EHS System

Huateng Pharma is dedicated to be an environment friendly manufacturer!

The sewage system of our plant has a total investment of RMB 20 million, and it processes 500 tons of sewage per day (a drainage index of 1,000 tons per day). After reaching the level 3 standard, it will be discharged to the sewage station through the pipe network and treated by the sewage station.

The sewage station adopts a closed and buried design, and the waste gas from the sewage station is discharged after gas collection, washing and absorption. The waste water enters the waste water treatment system after washing.

Each workshop is equipped with a sewage classification system, and the sewage will enter the corresponding temporary storage tank of the sewage station through different pipe networks after being classified and collected in the workshop. Sewage of different classifications will enter the biochemical system after being processed by the corresponding pre-physical and chemical system, and enter the park pipe network after the final treatment reaches the standard.

The anaerobic system adopts the most advanced TIC tower, the methane gas produced is ignited at high altitude, and the sludge can be applied or used as biological fertilizer after granulation.

The solid hazardous waste is handled by a hazardous waste treatment company.



4. Business Segments



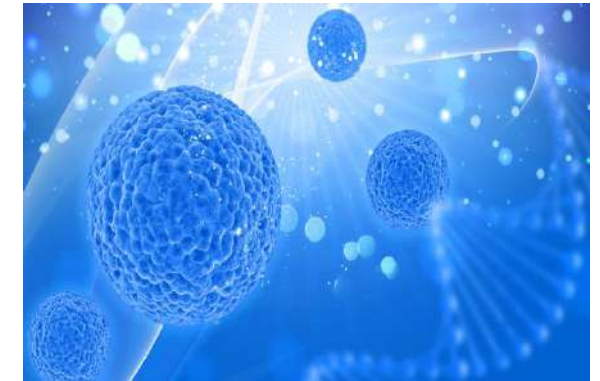
PEG Derivatives



Pharmaceutical
intermediates



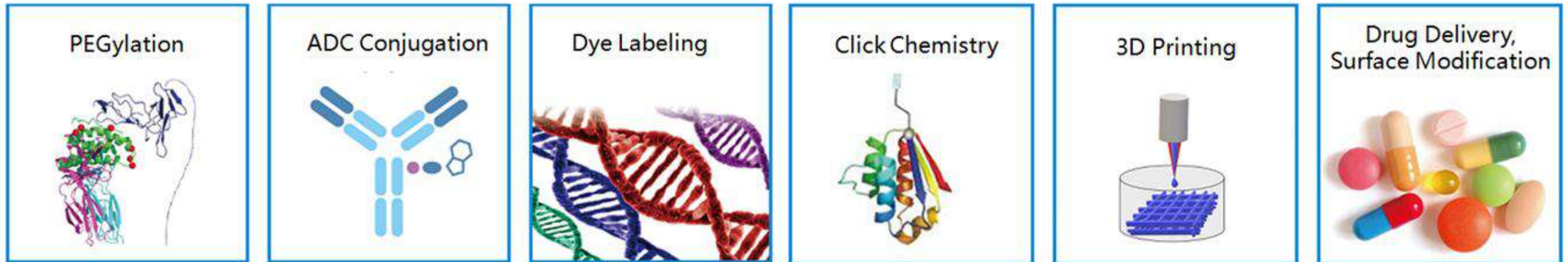
API



Preparation

PEG Derivatives

- 5000+ monodispersed and polydispersed PEG derivatives with molecular weights ranging from 200 to 4w.
- Multifunctional groups covers active esters, maleimides, sulfhydryl, amino, azide, phospholipids, fluorescein, etc.
- Intergrated production line and quality management system from PEGs raw materials production, trial production, pilot production and GMP commercial supplying.

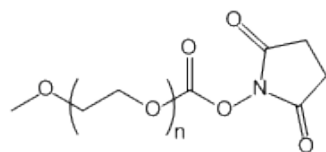


*PEGs have been shown to provide improved water solubility and biocompatibility in drugs and other applications. And PEG derivatives provide the ability to attach a variety of reactive functional groups to the terminal positions of these polymers has greatly increased their applications.

PEGylation

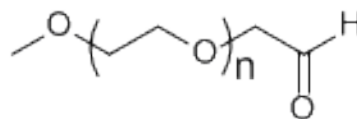
Significant pharmacological advantages of PEGylated peptides, proteins, and antibody fragments:

- 1) Improved drug solubility
- 2) reduced dosage frequency
- 3) potentially reduced toxicity
- 4) extended circulating life
- 5) increased drug stability
- 6) enhanced protection from proteolytic degradation



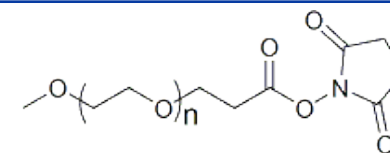
mPEG-SC

Side Chain of Anti-Diabetic Drug
 MW:1K,2K,3K;5K,10K;20K;30K



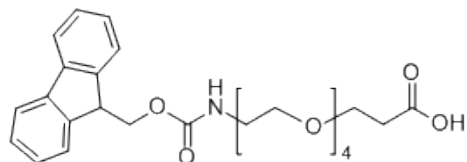
mPEG-Aldehyde

Side Chain of Nervous System Drug
 MW:1K,2K,3K;5K,10K;20K;30K



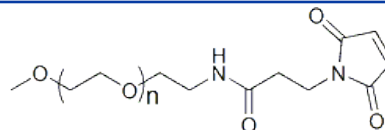
mPEG-Succinimidyl Propionate

Side Chain of Hematological System Drug
 MW:1K,2K,3K;5K,10K;20K;30K



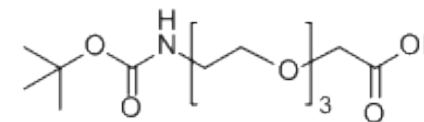
Fmoc-NH-PEG4-CH2CH2COOH

CAS No. : 557756-85-1



mPEG-Mal

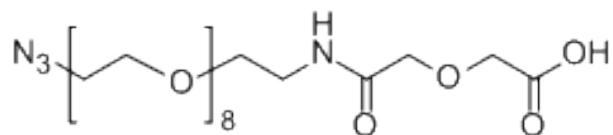
Side Chain of Anti-Diabetic Drug
 MW:1K,2K,3K;5K,10K;20K;30K



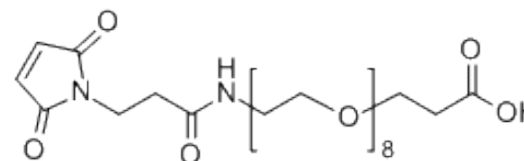
Boc-NH-PEG3-CH2COOH

CAS No. : 462100-06-7

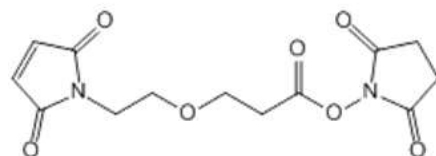
PEG Media for ADC Drugs



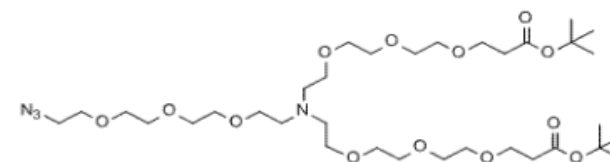
2-((Azido-PEG8-carbamoyl)methoxy)acetic acid
CAS No.: 846549-37-9



Mal-NH-PEG8-COOH
CAS No.: 1334177-86-4



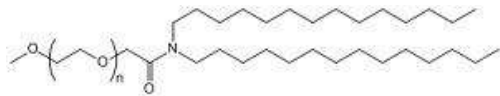
Maleimide-PEG1-Succinimidyl Propionate
CAS : 1807518-72-4



N-(Azido-PEG3)-N-bis(PEG3-t-butyl ester)
CAS: 2055042-56-1

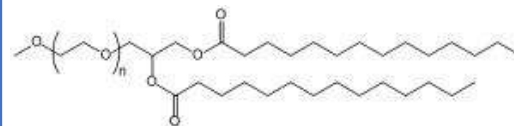
LNPs Delivery System Excipients

Lipid Nanoparticles (LNPs) are delivery systems commonly employed in the field of nucleic acid drugs. The LNP technology has been adopted for COVID-19 vaccine manufacture.



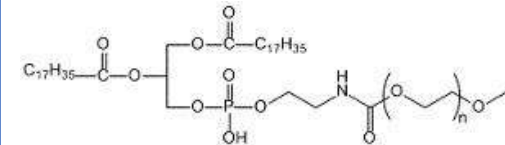
ALC-0159

CAS NO.: 1849616-42-7



mPEG-DMG

CAS NO.: 160743-62-4



mPEG-DSPE

CAS NO.: 147867-65-0

Dye Labeling

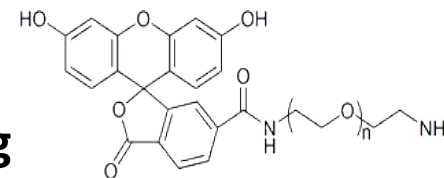
The PEG chains alter tissue biodistribution, allowing brighter liver metastases labeling and decreased accumulation in normal organs, particularly the liver.

Application:

- ① Cell Labeling
- ② Tissue Imaging
- ③ Tumor Identification

Fluorescein

Fluorescein labeling

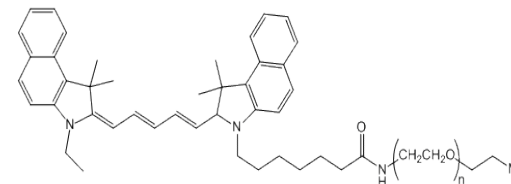


FITC-PEG-R

R=OH,SH,CHO,NH₂,NCO,N₃,Mal,Alkyne,AC,ACA,MA,Silane,GA,SA,GAA,SAA,AA,IA,EP,Mal,SC,SCM,SPA,SG,SS,GAS,SAS,CDI,NPC,OPSS,Ts,LA,Biotin,DSPE,DMPE,CLS etc

Cyanine

Cyanine Labeling

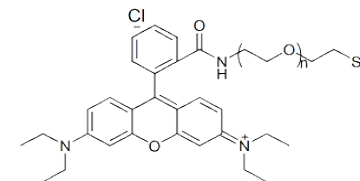


Cy-PEG-R

R=OH,SH,CHO,NH₂,NCO,N₃,Mal,Alkyne,AC,ACA,MA,Silane,GA,SA,GAA,SAA,AA,IA,EP,Mal,SC,SCM,SPA,SG,SS,GAS,SAS,CDI,NPC,OPSS,Ts,LA,Biotin,DSPE,DMPE,CLS etc

Rhodamine

Rhodamine labeling

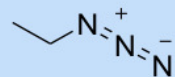


RB-PEG-R

R=OH,SH,CHO,NH₂,NCO,N₃,Mal,Alkyne,AC,ACA,MA,Silane,GA,SA,GAA,SAA,AA,IA,EP,Mal,SC,SCM,SPA,SG,SS,GAS,SAS,CDI,NPC,OPSS,Ts,LA,Biotin,DSPE,DMPE,CLS etc

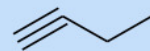
Click Chemistry Reagents

Click Chemistry has been widely used in bioconjugation, biolabeling and material sciences in pharmaceutical and biotech industry due to its mild conditions and high selectivity. Huateng Pharma provides various of high purity click chemistry tools with a broad range of functional groups: Azide, Alkyne, DBCO, BCN, etc.



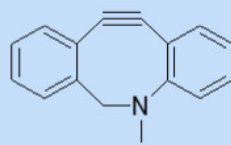
Azide Reagents

- Azide Reagents enables Click Chemistry and can be used to react with amine-containing biomolecules, modifying carboxylic acid groups, and etc.



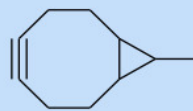
Alkyne Reagents

- Alkyne reagents can be reacted with azide-bearing compounds or biomolecules via CuAAC reaction to yield a stable triazole linkage.



DBCO Reagents

- DBCO (Dibenzocyclooctyne) reagents is one of the most reactive cycloalkynes for strain promoted alkyne azide cycloaddition (SPAAC), which enables Cu-free Click Chemistry.

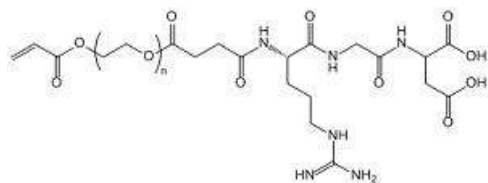


BCN Reagents

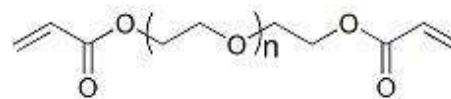
- BCN reagents (bicyclo[6.1.0]nonyne) can react with azide-tagged molecules or biomolecules via copper-free Click Chemistry

3D Printing

3D printing biomaterials require biocompatibility, porosity, biodegradability and good adhesion. PEG hydrogels meet these specifications, and in particular PEG acrylate (PEG-ACL) derivatives are widely applied in hydrogel formation via photopolymerization.



AC-PEG-RGD



AC-PEG-AC

CAS NO.: 26570-48-9

Featured Monodisperse PEGs

- Ultra High Purity
- Great aqueous solubility
- Smart choice of PEG length
- A broad selection of functional groups

CAS No.	Name
7218-43-1	Alkyne-PEG2-OH
108466-89-3	Boc-NH-PEG2-CH ₂ COOH
1365655-91-9	Boc-NH-PEG2-COOH
153086-78-3	BOC-NH-PEG2-NH ₂
475591-59-4	Boc-NH-PEG2-NH-Boc
139115-91-6	Boc-NH-PEG2-OH
756526-01-9	Fmoc-NH-PEG12-COOH
437655-95-3	Fmoc-NH-PEG4-CH ₂ COOH
756525-94-7	mPEG11-SPA
3386-18-3	OH-PEG9-OH

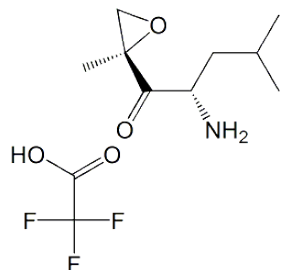
CAS No.	Name
2151823-08-2	mPEG24-NH ₂
170572-38-0	mPEG7-NH ₂
6048-68-6	mPEG9-OH
2182602-17-9	N-(ACID-PEG3)-N-BIS(PEG3-Azide)
1644163-57-4	N ₃ -PEG10-COOH
1271728-79-0	N ₃ -PEG2-CH ₂ CH ₂ COOtBu
857891-82-8	N ₃ -PEG8-NH ₂
252881-74-6	NH ₂ -PEG3-CH ₂ CH ₂ COOtBu
1446282-18-3	NH ₂ -PEG5-CH ₂ CH ₂ COOtBu
141282-35-1	NH ₂ -PEG5-CH ₂ COOH

Pharmaceutical Intermediates

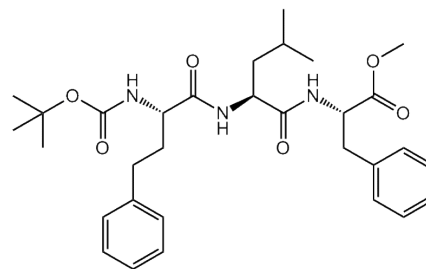
We are able to provide the services of various kinds of API intermediates' process development and scale-up production with capacities varying from gram to kilograms and multi tons.



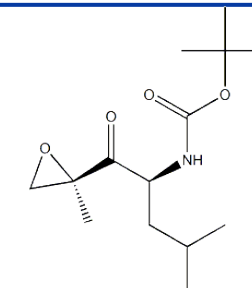
Anti-Cancer Series - Carfilzomib & Palbociclib Intermediates



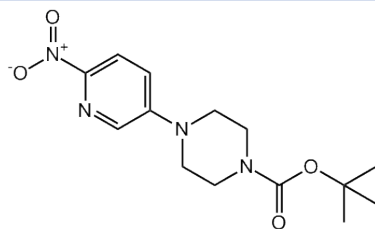
(2S)-2-Amino-4-Methyl-1-[(2R)-2-Methyloxiranyl]-1-pentanone trifluoroacetate
 CAS No. 247068-85-5
 For Carfilzomib



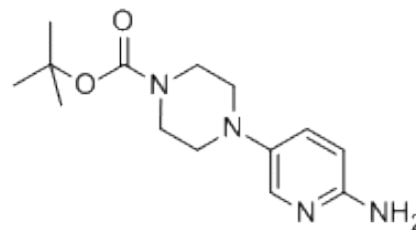
Boc-HPh-Leu-Phe-Ome
 CAS No. 868539-96-2
 For Carfilzomib



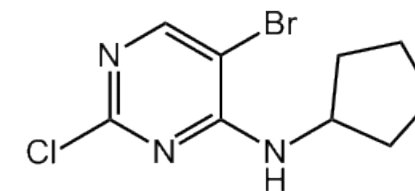
tert-Butyl ((s)-4-methyl-1-((r)-2-methyloxiran-2-yl)-1-oxopentan-2-yl)carbamate
 CAS No. 247068-82-2
 For Carfilzomib



1-BOC-4-(6-NITROPYRIDIN-3-YL)PIPERAZINE
 CAS No. 571189-16-7
 For Palbociclib

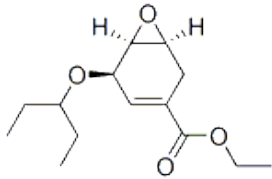
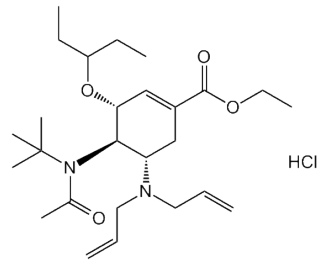
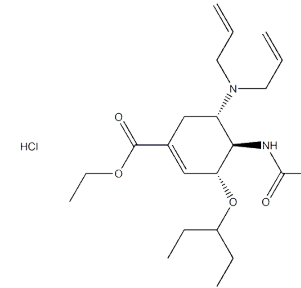
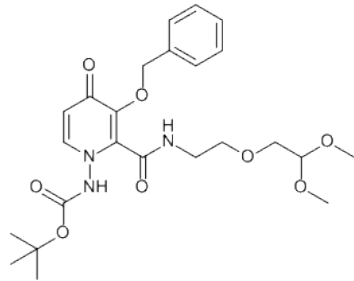
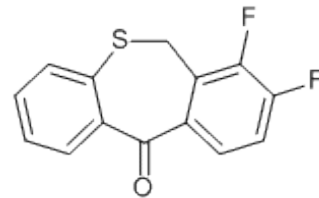
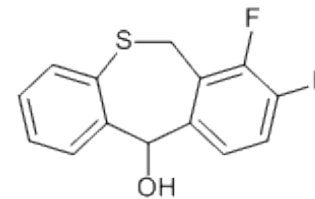
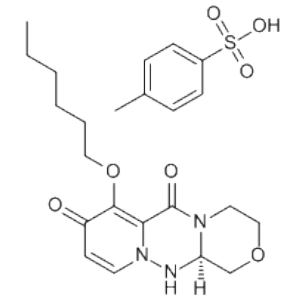


1-Boc-4-(6-aminopyridin-3-yl)piperazine
 CAS No. 571188-59-5
 For Palbociclib

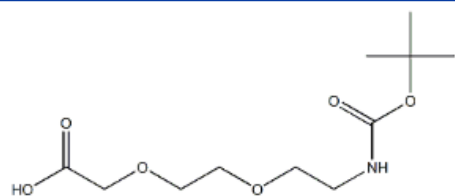


5-Bromo-2-chloro-N-cyclopentylpyrimidin-4-amine
 CAS No. 733039-20-8
 For Palbociclib

Anti-Viral Series - Oseltamivir & Baloxavir marboxil Intermediates

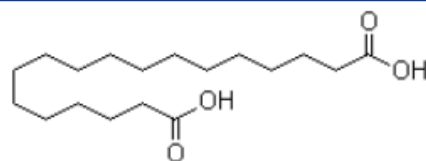
CAS No. 204254-96-6
For OseltamivirCAS No. 651324-08-2
For OseltamivirCAS No. 651324-09-3
For OseltamivirCAS No. 2136287-61-9
For Baloxavir marboxilCAS No. 2136287-66-4
For Baloxavir marboxilCAS No. 1985607-83-7
For Baloxavir marboxilCAS No. 2136287-68-6
For Baloxavir marboxil

Anti-Diabetic Series-Semaglutide Intermediates



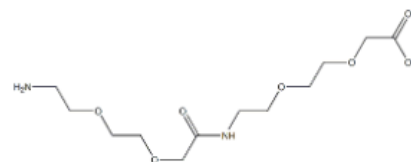
CAS. No 108466-89-3

3,8,11-Trioxa-5-azatridecan-13-oic acid, 2,2-diMethyl-4-oxo-



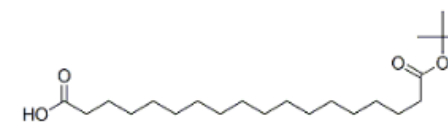
CAS No. 871-70-5

Octadecanedioic acid



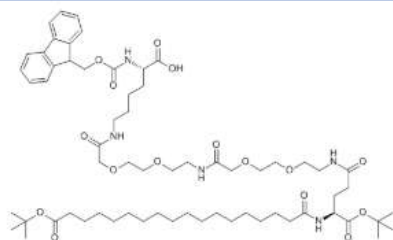
CAS. No 1143516-05-5

17-amino-10-oxo-3,6,12,15-tetraoxa-9-azaheptadecan-1-oic acid



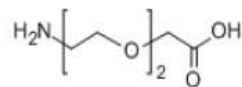
CAS. No 843666-40-0

Octadecanedioic acid mono-tert-butyl ester



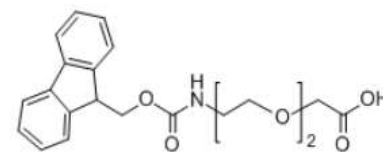
CAS No. 1662688-20-1

Fmoc-L-Lys[Oct-(otBu)-Glu-(otBu)-AEEA-AEEA]-OH



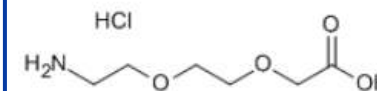
CAS. No 134978-97-5

2-(2-(2-Aminoethoxy)ethoxy)acetic acid



CAS No. 166108-71-0

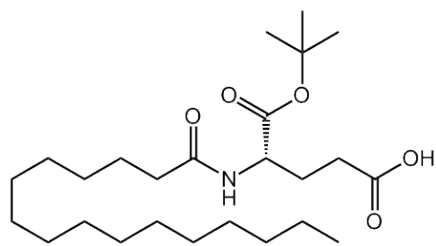
[2-[2-(Fmoc-amino)ethoxy]ethoxy]acetic acid



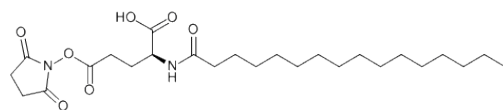
CAS No. 134979-01-4

2-(2-(2-Aminoethoxy)ethoxy)acetic acid hydrochloride

Anti-Diabetic Series – Liraglutide Intermediates

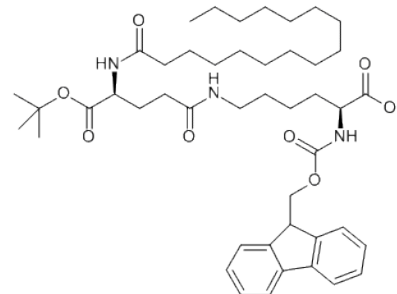


CAS NO. 536721-25-2

N-(1-Oxohexadecyl)-L-glutamic Acid
tert-Butyl Ester

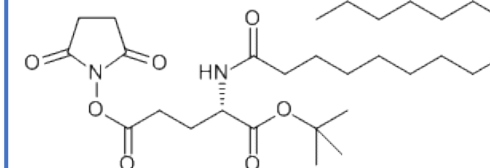
CAS No. 294855-91-7

Pal-Glu(OSu)-OH



CAS No. 1491158-62-3

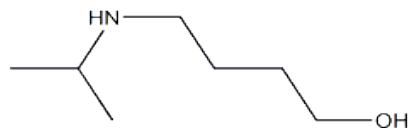
Fmoc-Lys(Pal-Glu-OtBu)-OH



CAS No. 204521-63-1

Pal-L-Glu(OSu)-OtBu

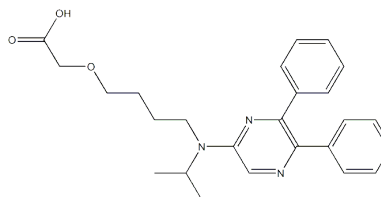
Antihypertensive Series - Selexipag & Bosentan Intermediates



4-(Isopropylamino)butanol

CAS No. 42042-71-7

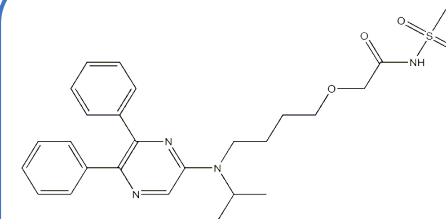
For Selexipag/UPTRAV



Selexipag active metabolite

CAS No. 475085-57-5

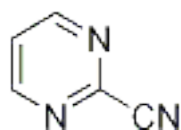
For Selexipag/UPTRAV



SELEXIPAG/NS-304

CAS No. 475086-01-2

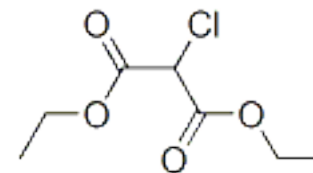
For Selexipag/UPTRAV



2-Cyanopyrimidine

CAS No. 14080-23-0

For Bosentan

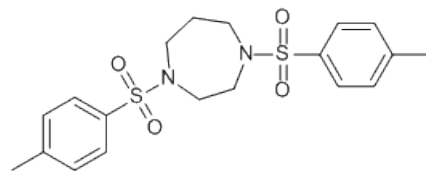


Diethyl chloromalonate

CAS No. 14064-10-9

For Bosentan

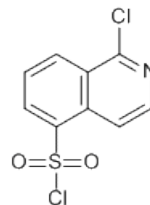
Antihypertensive Series – Fasudil & Ozagrel Intermediates



1,4-Ditosyl-1,4-diazepane

CAS NO.:5769-35-7

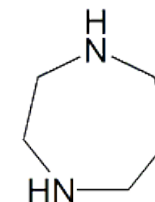
For Fasudil



1-Chloroisoquinoline-5-sulfonyl chloride

CAS NO.:141519-77-9

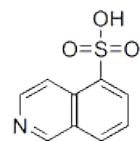
For Fasudil



homopiperazine

CAS NO.:505-66-8

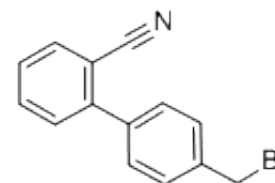
For Fasudil



5-isoquinolinesulfonic acid monohydrate

CAS No. 27655-40-9

For Fasudil



Methyl-3-(4-bromomethyl)cinnamate

CAS NO.:946-99-6

For Ozagrel



API

- Support defining synthesis routes and optimizing processes.
- Develop new processes and scale-up services , involving process route screening, experimental study design, process development and optimization, impurity synthesis and characterization, technology transfer services, and milligram to ton scale up.

Preparation

Specialize in innovative and generic drug development, process scale-up, technology transfer and optimization, lifecycle management, quality development and registration declaration support.

5. Professional Services



Custom
Synthesis

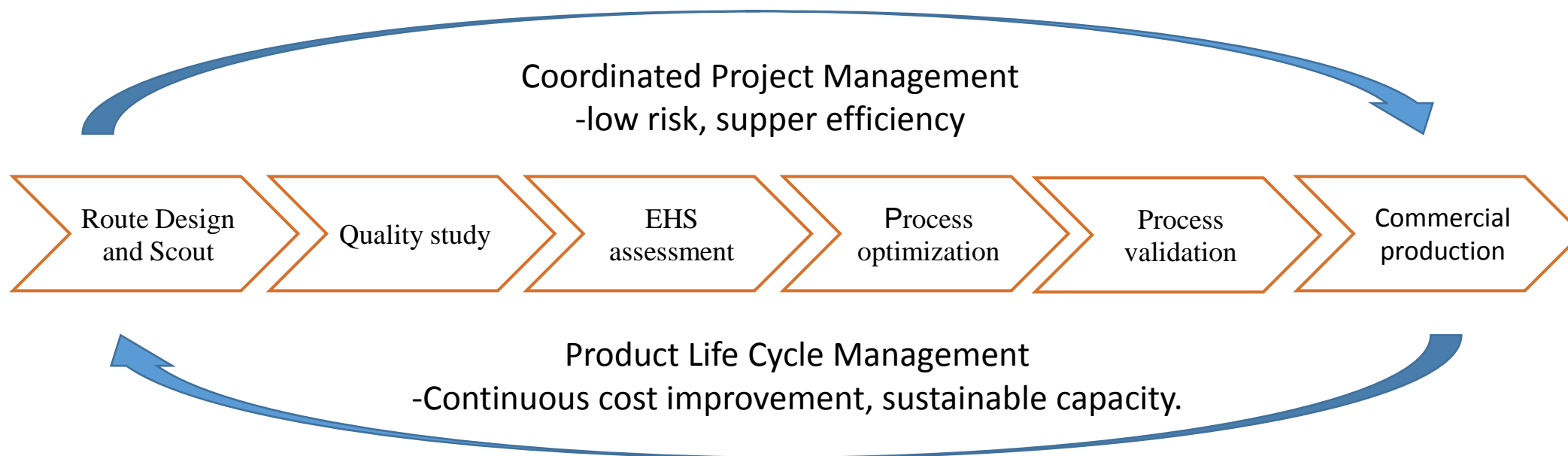
PEGylation

CDMO/CMO

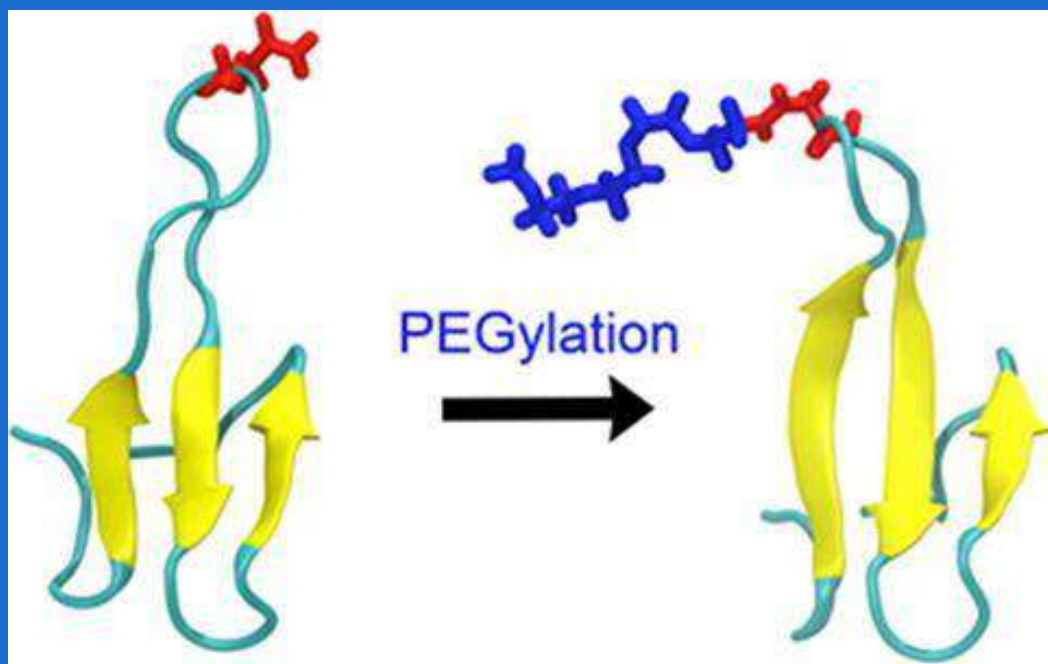
Custom Synthesis

Our Chemical Synthesis Capabilities

- (1) Various small molecule compounds
- (2) PEG derivatives with various functional group
- (3) Medicinal chemistry and drug discovery
- (4) Organometallic chemistry
- (5) Heterocyclic chemistry
- (6) Special reagents
- (7) Scale-up production
- (8) Academic exploration cooperation



PEGylation Services



- **Providing PEGylation services as a regular customer end-product.**
Custom synthesis of PEGylated conjugates, PEG-proteins, PEG-peptides, PEG-polypeptides, PEG-oligonucleotides, PEG-small molecules, and more, using Huateng Pharma catalog PEGs or custom PEG products.
- **Complete PEGylation method development services.**
Under this service model, we will provide PEGylated sample as well as the easily scalable and transferable PEGylation method development package.

CDMO/CMO Services

In order to better serve customers, we have built a CDMO technology platform, equipped with professional R&D, production and QC teams, established a pilot and scale-up production workshop that meets GMP standards.

We are able to provide:

- Customized R&D and production of APIs, intermediates and other chemicals ranging from grams to tons
- Process optimization and rapid scale-up of APIs, intermediates and other chemicals of existing synthetic processes
- Development of a more environmentally safe production process





Let Us Work Together to Forge A New Partnership of Win-win Cooperation

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Telephone: +86 731 89916275 Fax: +86 0731-82251112-818

Website: <https://us.huatengsci.com>



Thank You!