



石四藥集團有限公司
SSY Group Limited

(incorporated in the Cayman Islands with limited liability)
Stock Code: 2005.HK

2022 Annual Results & Roadshow material

Updated on 28 March 2023



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Business Profile

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- Shareholding & Group Structure
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Financial Highlights (2022)

(HK\$'000)	2022	2021	Change
Revenue	6,434,025	5,356,763	20.1%
Gross Profit	3,567,586	3,170,246	12.5%
Gross Profit Margin	55.4%	59.2%	(3.8%pt)
EBITDA	1,741,844	1,383,315	25.9%
EBITDA Margin	27.1%	25.8%	1.3%pt
Net Profit	1,122,837	785,533	42.9%
Net Profit Margin	17.5%	14.7%	2.8%pt
Earning per share (HK\$)	0.3761	0.2599	44.7%
Full Year Dividend	416,858	360,378	15.7%
Full Year Dividend per share (HK\$)	0.14	0.12	16.7%

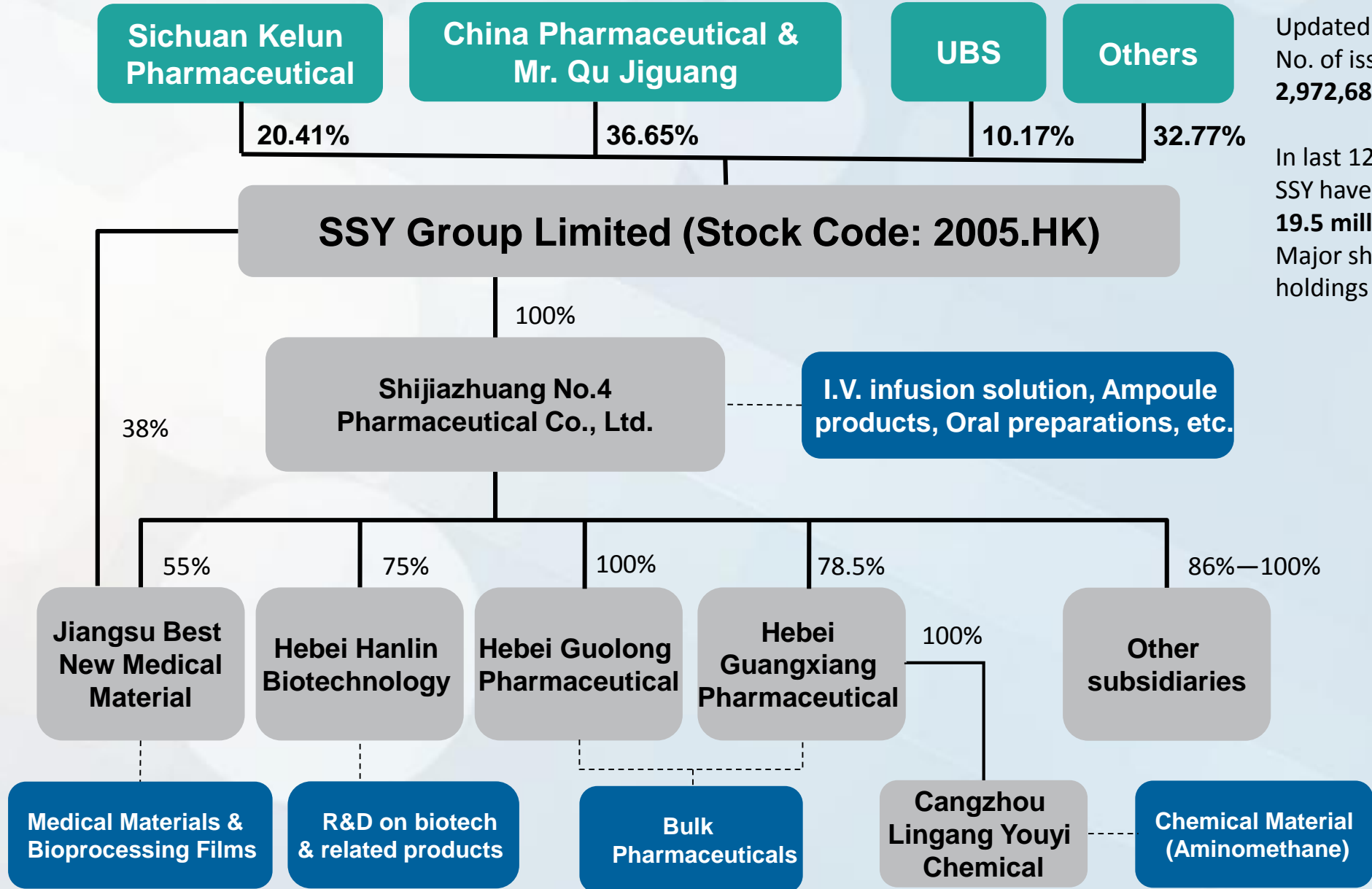


Financial Highlights (2022)

(HK\$'000)	31 December 2022	31 December 2021	Change
Cash and cash equivalent	1,667,547	1,661,736	5,811
Bank borrowings	3,207,648	3,103,195	104,453
Net Asset Value	6,545,824	6,492,708	53,116
Gearing Ratio	19.9%	18.9%	1.0%pt
Current Ratio	1.82	2.04	(0.22)
Inventory Turnover (Day)	104	122	(18)
Accounts Receivable Turnover (Day)#	110	127	(17)
NAV per share (HK\$)	2.20	2.17	0.03
Return on equity	17.1%	12.0%	5.1%pt

Remarks: # excluding bills receivables

Shareholding & Group Structure



Updated as at 28 March 2023

No. of issued shares :
2,972,683,385

In last 12 months,
SSY have been repurchased
19.5 million shares
Major shareholder increased
holdings for **14.18 million** shares

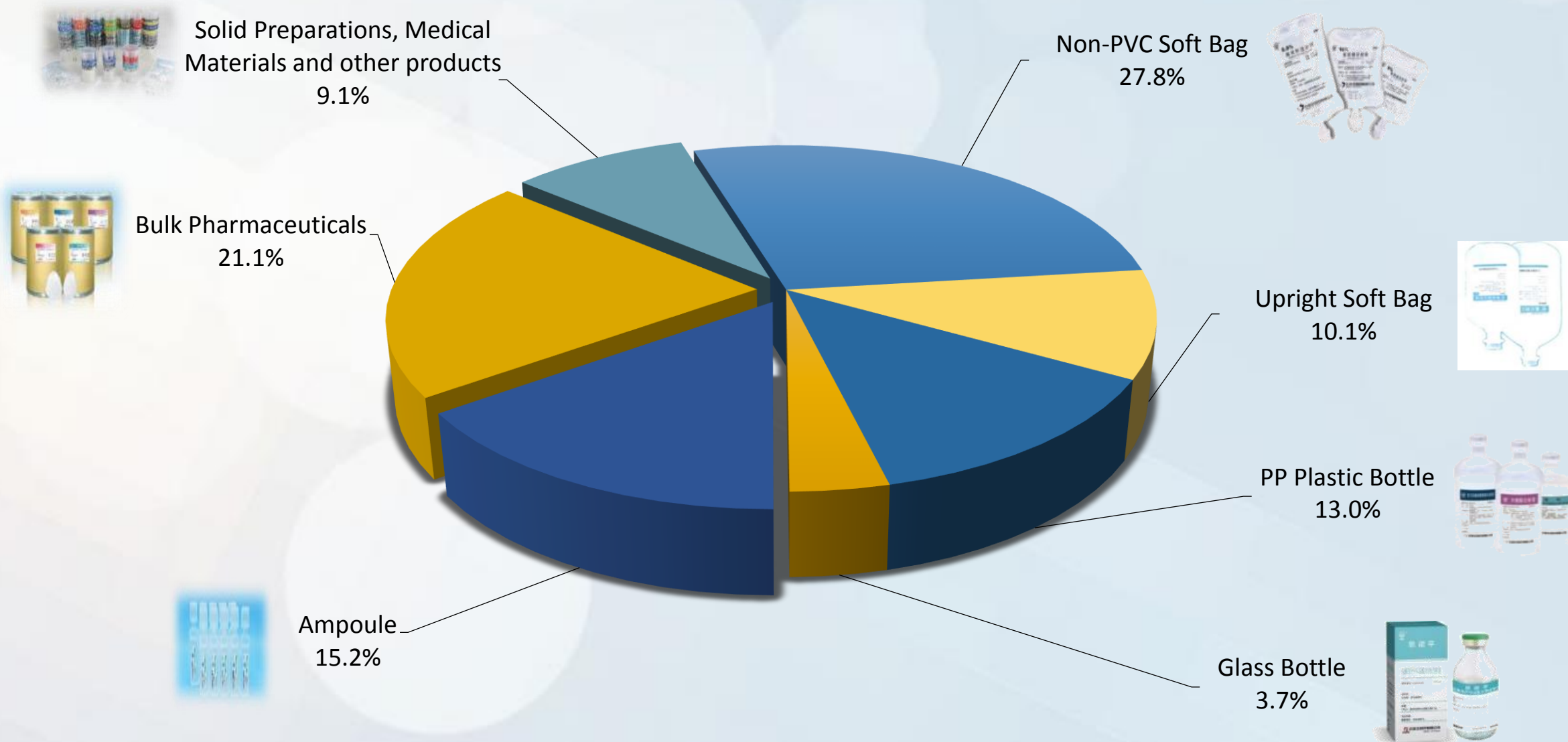


Revenue Overview

By Products	2022		2021	
	Revenue (HK\$'000)	% of Total Revenue	Revenue (HK\$'000)	% of Total Revenue
I.V. Infusion	3,510,342	54.6%	3,304,365	61.7%
Bulk Pharmaceuticals	1,358,949	21.1%	533,860	10.0%
Ampoule injections	978,707	15.2%	1,093,615	20.4%
Solid preparations and other products	413,908	6.4%	247,746	4.6%
Medical Materials	172,119	2.7%	177,177	3.3%
Total	6,434,025	100%	5,356,763	100%



Revenue Breakdown by Products (2022)





I.V. Infusion

Sales volume increase, Optimise product mix, New types of products rapid growth

- 👑 In 2022, sales volume of infusion solution reached 1,580 million bottles (bags), representing an increase of 16.2% as compared to last year, further improved market share
- 👑 Optimise product mix, therapeutic infusions contributed for 25.6% of total sales, increase 4.4%pt y-o-y
- 👑 Various key therapeutic products entered period of rapid growth :
Peritoneal Dialysis Solution, Ambroxol Hydrochloride and Sodium Chloride Injection, Moxifloxacin Hydrochloride, Ciprofloxacin Lactate
- 👑 End of epidemic in 2023, hospitalization rate of big scale hospitals recovers ; medium and small hospitals, clinics, market of New Rural Cooperation resume infusion, drive special growth this year
- 👑 In 2023, planned sales volume of I.V. infusion is targeted at no less than 1,800 million bottles (bags)
- 👑 By the end of 2023, new construction production lines of upright soft bag with additional production capacity of 600 million bags annually. By adopting new technologies and facilities, the production lines will turn to be the most advanced model of intelligent manufacturing and digital transformation in the industry



Revenue Overview - I.V. Infusion

Sales volume of Upright soft bag and PP Plastic bottle increased by 28.1% & 20.1% y-o-y respectively

By Packaging	I.V. Infusion – 2022 Revenue			
	Revenue (HK\$'000)	% of IV Revenue	Average Selling Price (ASP) (HK\$)	GP%
Non-PVC Soft Bag	1,788,791	51.0%	3.74	62.5%
Upright Soft Bag	647,621	18.4%	1.79	67.6%
PP Plastic Bottle	839,750	23.9%	1.30	47.9%
Glass Bottle	234,180	6.7%	2.65	34.6%
Total	3,510,342	100%	2.22	58.1%



Revenue Overview - I.V. Infusion

- Proportion of therapeutic infusions increased by 4.4 %pt
- Various products' volume entered rapid growth period: Peritoneal Dialysis Solution (+77%), Ambroxol Hydrochloride (+169%), Moxifloxacin Hydrochloride (+314%), Ciprofloxacin Lactate (+110%)

By Pharmaceutical Products	I.V. Infusion – 2022 Revenue			
	Revenue (HK\$'000)	% of IV Revenue	Average Selling Price (ASP) (HK\$)	GP%
Basic Infusions	2,075,133	59.1%	1.99	58.7%
Nutrition Infusions	535,621	15.3%	1.72	48.3%
Therapeutical Infusions	899,588	25.6%	4.02	62.5%
Total	3,510,342	100%	2.22	58.1%



Ampoule Injections

Increasingly rich in varieties, Production gradually scaled up

- 👑 In 2022, revenue accounted for HK\$980 million, decreased by 10.5% y-o-y, mainly due to change of sales channel of Betahistine. Selling expense dropped at the same time, resulting little impact on net profit
- 👑 Sales volume approximately 160 million, an increase of 49% y-o-y
- 👑 Focus to increase sales volume of national centralized procurement products :
Ambroxol Hydrochloride, Doxofylline, Ropivacaine Hydrochloride and Bromhexine Hydrochloride
- 👑 Pentoxifylline Injection, being the first production approval in the PRC, has future sales expected to reach 100 million
- 👑 Specialised products: Terbutaline Sulfate Nebuliser Solution, Dexmedetomidine, Adenosine Cyclophosphate, Levofloxacin Lactate, Moxifloxacin Hydrochloride Eye Drops
- 👑 Further increase in production capacity, from 560 million at the beginning of the year to 1,300 million



Accelerated upgrade of production and sales scale

- 👑 In 2022, revenue accounted for HK\$346 million, increased by 61.6% y-o-y
- 👑 National centralized procurement products : Cefaclor for Suspension, Cefdinir capsule, Prucalopride Succinate tablet and Felodipine II Sustained-release Tablets; Cefdinir being 31% of domestic market
- 👑 First entity being approved or passed consistency evaluation : Blonanserin tablets, Pentoxifylline Sustained-release tablets, Azithromycin for suspension and Rosuvastatin Calcium tablet (5mg)
- 👑 Added lyophilized powder (new preparation) : Azithromycin for Injection
- 👑 Currently 15 solid preparations types with 17 specifications passed or regarded as passing consistency evaluation in China
- 👑 Annual capacity increased to 3.5billion tablets(pills)



First year in achieving the economies of scale

- 👑 In 2022, revenue of external sales accounted for HK\$1,350 million, increased by 155% y-o-y
- 👑 Among which, sales volume of caffeine reached 5,000 tonnes, increased by 81% y-o-y
- 👑 Metronidazole reached 266 tonnes (up 76% y-o-y), Nifedipine reached 62 tonnes (up 150% y-o-y), Azithromycin reached 206 tonnes (stable y-o-y)
- 👑 35 types of bulk pharmaceuticals approved · with specialized types as follows : Epacistat, Pitavastatin calcium, Rosuvastatin calcium, Blonanserin, Linezolid, Argatroban, Lacosam, Theobromine, Pentoxifylline, Levonidazole, Tertiary Sulfate Butaline, Cinacalcet Hydrochloride, Lurasidone Hydrochloride



Steady operating result

- 👑 In 2022, revenue of external sales accounted for HK\$172 million, decreased by 2.9% y-o-y
- 👑 Bioprocessing films annual production capacity of 20 million square meters completed
- 👑 Jiangsu Best New Medical Material's shares quoted on the National Equities Exchange and Quotations, target its transition to Beijing Stock Exchange by end of year 2023



Exports to foreign markets in a positive trend

- 👑 In 2022, export market showed a trend of rebound, with export of preparations accounted for HK\$149 million, increased by 78% y-o-y
- 👑 Added or updated 44 product registration certificates in 11 countries
- 👑 Currently 341 product registration certificates in over 100 countries obtained



Research and Development

- During 2022, a total of 37 national production approvals were obtained (increased 37% y-o-y) · including 27 for preparations and 10 for bulk pharmaceuticals
- Currently 43 product types with 55 specifications or regarded as passing the consistency evaluation of China
- During 2022, 103 applications made to National Drug Administration Center for Drug Evaluation: 82 for preparations (including consistency evaluation), 21 for bulk pharmaceuticals, being number 1 in generic drugs for domestic pharma. co. Currently, 145 items awaiting for approvals : 114 for preparations (including consistency evaluation), 31 for bulk pharmaceuticals °
- Peritoneal Dialysis Solution (Lactate-G1.5%), Azithromycin for Suspension, Pentoxifylline Injection and Sustained Release Tablets, Blonanserin Tablets were the first passing such evaluation in the PRC
- 1st innovative drug - type I anti-tumor NP-01 project – achieved positive progress in Phase I clinical trial
- Ranked 138th in 2021 evaluation of >1,000 national enterprise technology centers by the NDRC
- Currently, 212 projects under R&D and 97 products awaiting approval. By end of 2023, target to obtain 82 approvals and make 112 applications for new products



Product passed/deemed passed consistency evaluation (43 Varieties, 55 Specifications)

Drug Name	Specification	Remark	Drug Name	Specification	Remark
Fluconazole Tablets	150mg	The First	Cefaclor dry suspension	0.125	
Fluconazole Tablets	50mg	Second	Metronidazole Tablets	0.2g	
Doxofylline Injection	10ml:0.1g	The First	Rosuvastatin Calcium Tablets	5mg	
Ropivacaine Hydrochloride Injection	10ml:100mg	The First	Blonanserin tablets	4mg	The First
Cefdinir Capsules	0.1g	Third	Acetaminophen Mannitol Injection	100ml:1000mg	Second
Prucalopride Succinate Tablets	1mg	Third	Levofloxacin Injection	20ml:0.5mg	
Prucalopride Succinate Tablets	2mg	Third	Peritoneal Dialysis Solution (Lactate G1.5%)	2000ml	The First
Rosuvastatin Calcium Tablets	10mg		Azithromycin dry suspension	0.1g	The First
Moxifloxacin Hydrochloride Sodium Chloride Injection	250ml:0.4g		Methylcobalamin Injection	1ml : 0.5mg	
Ambroxol Hydrochloride Injection	1ml:7.5mg		Valsartan Amlodipine Tablets (I)	Valsartan 80 mg/ Amlodipine 5 mg	
Ambroxol Hydrochloride Injection	2ml:15mg		Pentoxifylline Injection	5ml : 0.1g	The First
Ambroxol Hydrochloride Injection	4ml:30mg		Ipratropium bromide solution for inhalation	2ml:0.5mg	
Fluconazole Sodium Chloride Injection	100ml:0.2g	Second	Ipratropium bromide solution for inhalation	2ml:0.25mg	
Ciprofloxacin Lactate Sodium Chloride Injection	100ml:0.2g	The First	Azithromycin Tablets	0.25g	
Medium and long chain fat emulsion (C8~24Ve)	250ml	Third	Ciprofloxacin Lactate Sodium Chloride Injection	200ml:0.4g	Second
Metronidazole Sodium Chloride Injection	250ml	Third	Lacosamide Injection	20ml	
Metronidazole Sodium Chloride Injection	100ml	The First	Felodipine sustained release tablets	5mg	
Bromhexine Hydrochloride Injection	2ml	Second	Terbutaline Sulfate Injection	1ml:0.5mg	Third
Terbutaline Sulfate Nebulized Inhalation Solution	2ml:5mg	Second	Lipoic Acid Injection	24ml	Specification Second
Linezolid Glucose Injection	100ml	Second	Ornidazole Injection	6ml:1.0g	
Dexmedetomidine Hydrochloride Injection	2ml		Ornidazole Injection	3ml:0.5g	
Lacosamide Tablets	50mg		Lurasidone Hydrochloride Tablets	40mg	
Lacosamide Tablets	100mg		Pentoxifylline Extended Release Tablets	400mg	The First
Fluconazole Sodium Chloride Injection	50ml	The First	Sorbitol Mannitol Rinse	3000ml	Second
Moxifloxacin Hydrochloride Tablets	0.4g		Azithromycin for injection	0.5g	
Dexmedetomidine Hydrochloride Injection	1ml		Sodium Lactated Ringer Injection	500ml	Second
Moxifloxacin Hydrochloride Eye Drops	5ml		Argatroban Injection	2ml:10mg	
Levofloxacin Sodium Chloride Injection	100ml : 0.5g				

Note: Acetaminophen Mannitol Injection was approved for the indication of relieving fever in adults, and it is the first domestic company to be approved.

PART 02

Competitive Advantages





**Preparations, Bulk
Pharmaceuticals, Medical
Materials, Diversified and
Coordinated Development**

**I.V. Infusion Production Line
Intelligent Manufacturing ,
Largest Production Capacity on
Single Factory Basis in the
World**

**Numerous Specifications;
Complete Preparation
Types, Wide Coverage**

**Numerous Prize Recognition,
Main subsidiaries are
specialized and special new
enterprises**



Bulk Pharmaceuticals, Medical Materials, Preparations, Diversified and Coordinated Development

石家庄四药集团
SJZ No.4 Pharmaceutical



1 medical institute, 2 preparation, 2 bulk pharmaceutical, 1 chemical and 1 medical material production plant, forming whole-industry-chain by preparations + bulk pharmaceuticals + medical materials

- 22 I.V. Infusion production lines, annual 2 billion bottles(bags),
- 8 ampoule production lines, annual capacity 1,300 million bottles,
- 4 oral preparation production lines, annual capacity 3.5 billion pills,
- 9 bulk pharmaceutical production lines, annual capacity 12,000 tons,
- 1 chemical production line, annual capacity 30,000 tons,
- Non-PVC film production line, annual capacity 25million sq. meters,
- Rubber stopper & gasket production line, annual capacity 3.5 billion units,
- Bioprocessing Film production line, annual capacity 2,000 sq. meters,
- Production lines of emulsion, lyophilized powder injection, antitumor drugs, medical equipment and in vitro diagnostic (IVD) reagent under construction

Diversified and Coordinated Development - Pharmaceutical Research Institute



It covers an area of 85 acres and has advanced equipment such as high-efficiency/ultra-high-performance liquid chromatographs, gas chromatographs, Fourier infrared spectrometers, and the leading hardware level in the country.

It has more than 550 high-level professional research teams led by doctors and masters in synthesis, analysis, preparations and APIs, and has product pipelines in multiple fields such as tumor, antiviral, respiratory, neuropsychiatric, cardiovascular and cerebrovascular, biofilm, etc.

Co-founded innovative platforms such as engineering laboratories and technology research centers with numerous universities in China.



Diversified and Coordinated Development – I.V. Infusion production base



Shijiazhuang No.4 Pharmaceutical

Major products: Non-PVC Soft Bag IV,
Upright Soft Bag IV, PP Plastic Bottle IV, Glass
Bottle IV,
PP Ampoule Injections,
Tablets, Capsule and Granules

Varieties passed/deemed passed consistency evaluation in first 3

Serial	Drug Name	Specification	Remark
1	Fluconazole Tablets	150mg	The First
2	Doxofylline Injection	10ml : 0.1g	The First
3	Ropivacaine Hydrochloride Injection	10ml : 100mg	The First
4	Ciprofloxacin Lactate Sodium Chloride Injection	100ml	The First
5	Metronidazole Sodium Chloride Injection	100ml	The First
6	Fluconazole Sodium Chloride Injection	50ml	The First
7	blonanserin tablets	4mg	The First
8	Peritoneal Dialysis Solution (Lactate G1.5%)	2000ml	The First
9	Azithromycin dry suspension	0.1g	The First
10	Pentoxifylline Injection	5ml : 0.1g	The First
11	Pentoxifylline Extended Release Tablets	400mg	The First
12	Fluconazole Tablets	50mg	Second
13	Fluconazole Sodium Chloride Injection	100ml : 0.2g	Second
14	Bromhexine Hydrochloride Injection	2ml	Second
15	Terbutaline Sulfate Nebulized Inhalation Solution	2ml : 5mg	Second
16	Linezolid Glucose Injection	100ml	Second
17	Acetaminophen Mannitol Injection	100ml : 1000mg	Second
18	Ciprofloxacin Lactate Sodium Chloride Injection	200ml:0.4g	Second
19	Lipoic Acid Injection	24ml	Second
20	Sorbitol Mannitol Rinse	3000ml	Second
21	Sodium Lactated Ringer Injection	500ml	Second
22	Cefdinir Capsules	0.1g	Third
23	Prucalopride Succinate Tablets	1mg	Third
24	Prucalopride Succinate Tablets	2mg	Third
25	Metronidazole Sodium Chloride Injection	250ml	Third
26	Medium and long-chain fat emulsion injection (C8~24Ve)	250ml	Third
27	Terbutaline Sulfate Injection	1ml:0.5mg	Third

Diversified and Coordinated Development – Bulk Pharmaceuticals Production Base

Hebei Guangxiang Pharmaceutical

Major products: Caffeine

Theophylline , Aminophylline Series

Metronidazole, Benzoyl

Metronidazole

Nifedipine, Xanthinol nicotinate

Cangzhou Lingang Youyi Chemical

Acquisition completed in March 2022

Major product: Methylamine (API for caffeine and other pharmaceutical/agricultural products)



Hebei Guolong Pharmaceutical

Major productis: Hydroxyethyl starch series

Respiratory system (Terbutaline, Bromhexine)

Anti-biotics (Azithromycin, Moxifloxacin, Linezolid)

Mental Nervous system (Lurasidone, Blonanserin)

Other (Tirofiban, Prucalopride Succinate)



Specialised Bulk Pharmaceuticals

Bulk Pharmaceuticals with status A owned by Hebei Guangxiang Pharmaceutical (18)

Serial	Registration No.	Drug Name	Status
1	Y20200001269	Epalrestat	A
2	Y20190007857	Aminophylline	A
3	Y20190007856	Theophylline	A
4	Y20190006345	Niacin	A
5	Y20190002961	Benzoyl metronidazole	A
6	Y20190002960	Nifedipine	A
7	Y20190002959	caffeine	A
8	Y20190002958	Metronidazole	A
9	Y20200001432	pitavastatin calcium	A
10	Y20200001464	lacosamide	A
11	Y20210000026	Levonidazole	A
12	Y20210000025	Ornidazole	A
13	Y20200001394	Pentoxifylline	A
14	Y20210000024	Rosuvastatin Calcium	A
15	Y20200001465	Argatroban	A
16	Y20210000927	Doxofylline	A
17	Y20210000931	Tinidazole	A
18	Y20210000930	Theobromine	A

Bulk Pharmaceuticals with status A owned by Hebei Guolong Pharmaceutical (17)

Serial	Registration No.	Drug Name	Status
1	Y20200001123	Cinacalcet hydrochloride	A
2	Y20200000767	ipratropium bromide	A
3	Y20200000466	Dexmedetomidine Hydrochloride	A
4	Y20190001004	blonanserin	A
5	Y20190021513	Linezolid	A
6	Y20190001130	lurasidone hydrochloride	A
7	Y20190021527	Terbutaline Sulfate	A
8	Y20190007337	Hydroxyethyl starch 40	A
9	Y20190007065	Hydroxyethyl starch 130/0.4	A
10	Y20190006891	Tenofovir disoproxil fumarate	A
11	Y20180001418	prucalopride succinate	A
12	Y20170001049	Tirofiban Hydrochloride	A
13	Y20170000871	Moxifloxacin hydrochloride	A
14	Y20170000397	Arbidol hydrochloride	A
15	Y20170000261	bromhexine hydrochloride	A
16	Y20170000185	Hydroxyethyl starch 200/0.5	A
17	Y20170000182	Azithromycin	A

Diversified and Coordinated Development – Medical Materials Production Base



**Jiangsu Best New
Medical Material**

Major products:

Bioprocessing film series

Multi-layer co-extrusion

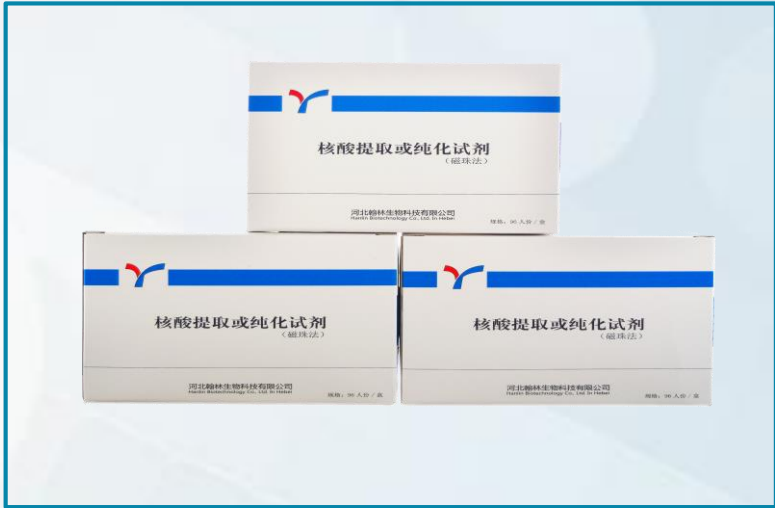
infusion films

Rubber stopper series

Gasket series



Diversified and Coordinated Development – Biotechnology and product development



Hebei Hanlin Technology
Major products :
Medical Devices (Medical Beauty)
In vitro diagnostic reagents
Disinfectants



No. of Production approvals: **371**
including
268 Preparations, **34** bulk pharmaceuticals
41 medical materials and **28** other products

No. of Preparations approved: **268**
including
163 in Essential Drug List, **55** passed consistency
evaluation, **8** in National Centralised Procurement

Distribution of fields of preparation products

27% - cardiovascular system
24% - nervous system
15% - anti-infections
9% - digestive system
8% - respiratory system
6% - electrolyte/nutrition
4% - anti-tumor
7% - other fields

Examples of Specialised products



Pentoxifylline Injection



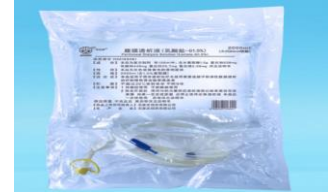
Blonanserin tablets



Arbidol Hydrochloride Capsules



Bromhexine Hydrochloride Injection



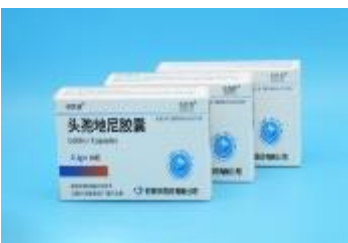
Peritoneal Dialysis Solution



Lacosamide Injection



Numerous Varieties, Complete Dosage Form, Wide coverage



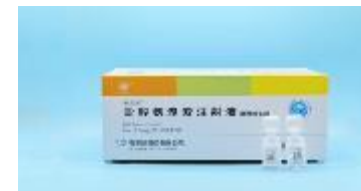
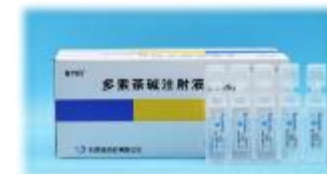
Solid preparations

- **National Centralised procurement :** Cefaclor for Suspension, Cefdinir capsule, Prucalopride Succinate tablet and Felodipine II Sustained-release Tablets
- **1st approval in PRC:** Blonanserin tablets, Azithromycin for suspension
- **1st passed consistency evaluation :** Pentoxifylline Sustained-release tablets



I.V. Infusion

- **Packaging :** Non-PVC soft bag, upright soft bag, PP bottle, glass bottle
- **National Centralised procurement :** Fluconazole Sodium Chloride Injection
- **1st passed consistency evaluation :** Peritoneal Dialysis Solution (Lactate-G1.5%)
- **Key products :** Mannitol, Metronidazole, Moxifloxacin, hemofiltration solution, peritoneal dialysis solution, ciprofloxacin lactate, sodium lactate Ringer, compound amino acid, hydroxyethyl starch 130



Ampoule Injections

- Betahistine volume continued to grow rapidly
- **National Centralised procurement :** Ambroxol Hydrochloride, Doxofylline, Ropivacaine Hydrochloride and Bromhexine Hydrochloride
- **1st passed consistency evaluation :** Pentoxifylline Injection
- **Specialised products :** Terbutaline Sulfate Nebuliser Solution, Dexmedetomidine, Moxifloxacin Hydrochloride Eye Drops



Market share increases for products in national centralised procurement

National centralised procurement batch (Time)	Products being selected	Market share in PRC government hospitals		
		2020	2021	1H of 2022
3 rd batch (Aug 2020)	Prucalopride Succinate tablet	1.09%	6.59%	9.26%
	Cefdinir capsule*	2.30%	32.60%	31.14%
4 th batch (Feb 2021)	Doxofylline Injection	0.73%	7.69%	16.40%
	Ambroxol Hydrochloride Injection	0.31%	0.91%	2.15%
5 th batch (Jun 2021)	Fluconazole Sodium Chloride Injection*	0.37%	1.77%	18.45%
	Ropivacaine Hydrochloride Injection*	0.00%	0.38%	10.16%
7 th batch (Jul 2022)	Cefaclor for Suspension	4.84%	3.16%	2.48%
	Bromhexine Hydrochloride Injection	0.00%	16.01%	41.63%
8 th batch (Mar 2023)	Felodipine/Felodipine II Sustained-release Tablets			
	Ornidazole Injection			
	Metronidazole Injection			
	Mecobalamin Injection			
	Argatroban Injection			

*In the 1H of 2022, we ranked **top 3** in **Cefdinir capsule, Fluconazole Sodium Chloride Injection and Ropivacaine Hydrochloride Injection** market

I.V. Infusion Production Line Intelligent Manufacturing, Largest Production Capacity on Single Factory Basis in PRC

No.4 Pharma	I.V. Production Capacity Expansion						
	Year 2019	Increase / % change	Year 2021	Increase / % change	Year 2022	Increase / % change	Year 2023
Non-PVC Soft Bag (Note1)	750M	-	750M	-	750M	-	750M
Upright Soft Bag (Note2)	300M	-	300M	-	300M	600M/200%	900M
PP Plastic Bottle (Note3)	600M	150M/25%	750M	-	750M	-	750M
Glass Bottle	200M	-	200M	-	200M	-	200M
Total	1,850M	150M/25%	2,000M	-	2,000M	600M/200%	2,600M

(Note1) : Increased 20 million bags in large volume soft bag production line in year 2019

(Note2) : Increased 600 million bags in upright soft bag production line in year 2023

(Note3) : Increased 150 million bottles in plastic bottle production line by technical improvement in year 2021



Awards and recognitions



- ✓ 3 entities of the Group in bulk pharmaceuticals recognised as High and New Technology Enterprises as well as provincial level “Specialised and New” small and medium-size enterprises
- ✓ Selected in the 2022 list of outstanding smart manufacturing scenarios
- ✓ National Intellectual Property Demonstration Enterprise
- ✓ Top 100 Enterprises in China's Pharmaceutical Industry
- ✓ Top 30 Best Industrial Enterprises in China's Pharmaceutical R&D Product Line
- ✓ Top 20 Leading Enterprises in the Internationalization of Pharmaceutical Preparations

PART 03

R&D Status and Prospects

- Strategy in generic drugs R&D
- Specialised drug platform
- Products awaiting approval
- Products for approval application
- Key innovative drug R&D projects
- Strong external R&D support





Strategy in generic drugs R&D

Bulk pharmaceuticals

- Products requires difficult process/ special process products, self-owned patented technology products
- Forming Product series
- Bulk pharmaceuticals in shortage or monopoly
- Industrialization of Microchannel Technology

Basic infusion solutions

- Sourcing domestic raw materials for basic infusion
- Continue to improve and internationalize product
- Facilitate clinical application of basic infusion packaging
- Maintain and consolidate product technology and market advantages

Solid preparations

- Focus on products with large market demand and urgent clinical needs
- Bulk pharmaceuticals + preparation integration
- Extension of drug applications
- Sustained-release technology & product development

Injections

- Complete the consistency evaluations of existing selected therapeutic infusion
- Diversification in therapeutic fields
- Scale-up of ampoule injections
- Development of anti-tumor, emulsions, lyophilized & long-release injections



Strategy in generic drugs R&D (Key therapeutic fields)

Respiratory system: injections/inhalation/oral

Stimulates lysosomal release from mucus-secreting cells (bromhexine); Phosphodiesterase (PDE) Inhibitors (Doxofylline); Cholinergic Receptor (M Receptor) Antagonist (Ipratropium Bromide); Beta-adrenoceptor agonists (terbutaline, epinephrine)

Nervous system : oral/injections

GABA receptors and voltage-gated Na⁺ channels (stipentol, exclusive product); Dopamine and serotonin receptor antagonists (blonanserin, 1st product); COMT and MAO-B inhibitors (Parkinson, single and combination agents) ; 5-HT* receptor antagonists (antidepressants)

Anesthesia and Contrast agent: Injection

Caines series (e.g. lidocaine, ropivacaine); Fat emulsion anesthetic preparation (the most advanced domestic production technology); Drugs for anesthesia; Contrast agents (gadolinium and indocyanine green)

Cardiovascular system: oral/injection

Hypertension (single prescription, compound preparation); Hyperglycemia (extension of indications); Hyperlipidemia (representative products with different mechanisms); Nephrology field (combination of oral and dialysis) ; Others (Exclusive in passing consistency evaluation: Pentoxifylline Sustained Release Tablets)

Antibacterial & antiviral field: oral/ injection

- Cephalosporins (dry suspension for children)
- Macrolides (injection, dry suspension)
- Conazoles (infusion, tablet, dry suspension)
- Floxacin (infusion, tablet, eye drop)
- Oxazolidinones (infusion, lyophilized, tablet, dry suspension)
- Nitazoles (infusion, water injection, tablet)
- Antivirals (Arbidol, Oseltamivir, etc.)



Bulk Pharmaceuticals under review (Hebei Guangxiang)

Registration No.	Drug Name	Status	Expected approval
Y20210000927	Doxofylline	A	Approved
Y20210000931	Tinidazole	A	Approved
Y20210000930	Theobromine	A	Approved
Y20210000678	Tedizolid Phosphate	I	2023.04
Y20210001167	Uradil	I	2023.04
Y20210001168	Urapidil hydrochloride	I	2023.04
Y20210001076	Tofacitinib citrate	I	2023.06
Y20210001074	Entacapone	I	2023.07
Y20220000115	salbutamol sulfate	I	2023.08
Y20220000118	Levosaltamol Hydrochloride	I	2023.08
Y20220000117	Lidocaine Hydrochloride	I	2023.09
Y20220000116	Vortioxetine hydrobromide	I	2023.10
Y20220000359	Benserazide Hydrochloride	I	2023.11
Y20220000360	Isoproterenol Hydrochloride	I	2023.11
Y20220000599	Rasagiline mesylate	I	2023.12
Y20220000836	norepinephrine bitartrate	I	2024
Y20220000874	Butylphthalide	I	2024
Y20220000954	Formoterol fumarate	I	2024
Y20220000958	adrenaline	I	2024
Y20220001108	Phenylephrine Hydrochloride	I	2024



Bulk Pharmaceuticals under review (Hebei Guolong)

Registration No.	Drug Name	Status	Expected approval
Y20190000687	L-malic acid	I	2023.06
Y20210000821	Stippentol	I	2023.08
Y20220000356	Nicorandil	I	2023.11
Y20220000426	etomidate	I	2023.12
Y20220000427	Trexaglipitin succinate	I	2023.12
Y20220000598	cisatracurium besylate	I	2023.12
Y20220000597	Alogliptin Benzoate	I	2023.12
Y20210000676	Safinamide mesylate	I	2024
Y20220000818	Dapagliflozin	I	2024
Y20220000910	Doxazosin Mesylate	I	2024
Y20220001251	Betahistine mesylate	I	2024
Y20220001252	deferasirox	I	2024
Y20230000011	Mexartan Potassium	I	2024



Type 3 Preparations under review

Expected to be approved by the end of 2023

Serial	Acceptance No.	Drug Name	Specification
1	CYHS2101884	Terbutaline Sulfate Injection	1ml:0.5mg
2	CYHS2102018	Lipoic Acid Injection	24ml:600mg
3	CYHS2101827	Ornidazole Injection	3ml:0.5g
4	CYHS2101828	Ornidazole Injection	6ml:1.0g
5	CYHS2102028	Pentoxifylline Extended Release Tablets	400mg
6	CYHS1600212	Sorbitol Mannitol Rinse	3000ml
7	CYHS2200020	Oseltamivir Phosphate Dry Suspension	6mg/ml
8	CYHS2200546	Ondansetron Hydrochloride Tablets	8mg
9	CYHS2200547	Ondansetron Hydrochloride Tablets	4mg
10	CYHS2200323	Citicoline Sodium Injection	4ml:500mg
11	CYHS2200617	Stipopentol dry suspension	250mg
12	CYHS2200618	Stipopentol dry suspension	500mg
13	CYHS2200496	Tirofiban Hydrochloride Injection	15ml:3.75mg
14	CYHS2200698	Tinidazole Tablets	0.5g
15	CYHS2200719	Ornidazole Tablets	0.5g
16	CYHS2201075	Aminophylline Injection	10ml
17	CYHS2201076	Aminophylline Injection	20ml
18	CYHS2201078	Salbutamol Sulfate Injection	1ml
19	CYHS2200543	Linezolid Sodium Chloride Injection	300ml
20	CYHS2200777	Epalrestat Tablets	50mg
21	CYHS2201031	Arbidol Hydrochloride Tablets	50mg
22	CYHS2201221	Cefuroxime Axetil Dry Suspension	0.125g
23	CYHS2201222	Cefuroxime Axetil Dry Suspension	0.25g
24	CYHS2201219	Ozagrel Sodium Injection	2.5ml
25	CYHS2201220	Ozagrel Sodium Injection	5ml
26	CYHS2201248	Citicoline Sodium Injection	4ml:1g
27	CYHS2201328	Nicorandil for Injection	12mg
28	CYHS2201309	Sodium Bicarbonate Ringer's Injection	500ml
29	CYHS2201365	Magnesium Sulfate Injection	2ml
30	CYHS2201366	Magnesium Sulfate Injection	10ml
31	CYHS2201367	Magnesium Sulfate Injection	20ml



Type 4 Preparations under review

Expected to be approved by the end of 2023

Serial	Acceptance No.	Drug Name	Specification
1	CYHS2101193	Lacosamide Injection	20ml : 200mg
2	CYHS2101621	Felodipine sustained release tablets	5mg
3	CYHS2101759	Lurasidone Hydrochloride Tablets	40mg
4	CYHS2102124	Argatroban Injection	2ml: 10mg
5	CYHS2102153	Cinacalcet Hydrochloride Tablets	25mg
6	CYHS2200058	Urapidil Hydrochloride Injection	5ml
7	CYHS2200059	Urapidil Hydrochloride Injection	10ml
8	CYHS1900588	Compound Electrolyte Injection II	500ml
9	CYHS1900589	Compound Electrolyte Injection II	1000ml
10	CYHS2101706	Pitavastatin Calcium Tablets	2mg
11	CYHS2101706	Pitavastatin Calcium Tablets	1mg
12	CYHS2200320	Tedizolid Phosphate for Injection	200mg
13	CYHS2200984	Tedizolid Phosphate Tablets	200mg
14	CYHS2201023	Ropivacaine Hydrochloride Sodium Chloride Injection	100ml
15	CYHS2201044	Rasagiline Mesylate Tablets	1mg
16	CYHS2201195	Propofol Medium / Long Chain Fat Emulsion	10ml
17	CYHS2201196	Propofol Medium / Long Chain Fat Emulsion	20ml
18	CYHS2201268	Vortioxetine Hydrobromide Tablets	5mg
19	CYHS2201269	Vortioxetine Hydrobromide Tablets	10mg



Preparations under consistency evaluation review

Expected to be approved by the end of 2023

Serial	Acceptance No.	Drug Name	Specification
1	CYHB2250308	Azithromycin for injection	0.5g
2	CYHB2250342	Sodium Lactated Ringer Injection	500ml
3	CYHB1950801	Peritoneal Dialysis Solution (Lactate - G2.5%)	2000ml
4	CYHB2050115	Sodium Acetate Ringer Injection	500ml
5	CYHB2250493	Low Calcium Peritoneal Dialysis Solution (Lactate - G1.5%)	2000ml
6	CYHB1950835	Sodium Bicarbonate Injection	250ml
7	CYHB1950769	Potassium Chloride Injection	10ml:1.5g
8	CYHB1950790	Potassium Chloride Injection	10ml:1g
9	CYHB2250614	Low Calcium Peritoneal Dialysis Solution (Lactate - G2.5%)	2000ml
10	CYHB2250688	Metoprolol Tartrate Injection	5ml



Production approvals application to submit in 2023



To submit soon

- ◆ 24 types of bulk pharmaceuticals
- ◆ 40 types of liquid preparations with 50 specifications
- ◆ 29 types of solid preparations with 38 specifications



Major projects of innovative drug development

Type I New Drug

- (a) **NP-01** : Type I new drug for gastric cancer, undergoing phase I clinical trials, expected to start the phase II clinical trials in July 2023
- (b) **ADN-9** : Anti-hepatic fibrosis type I new drug, phase I clinical trials expected to start in September 2023
- (c) **SYN-045** : Anti-pulmonary hypertension drug, phase I clinical trials expected to start in December 2023

Type II New Drug

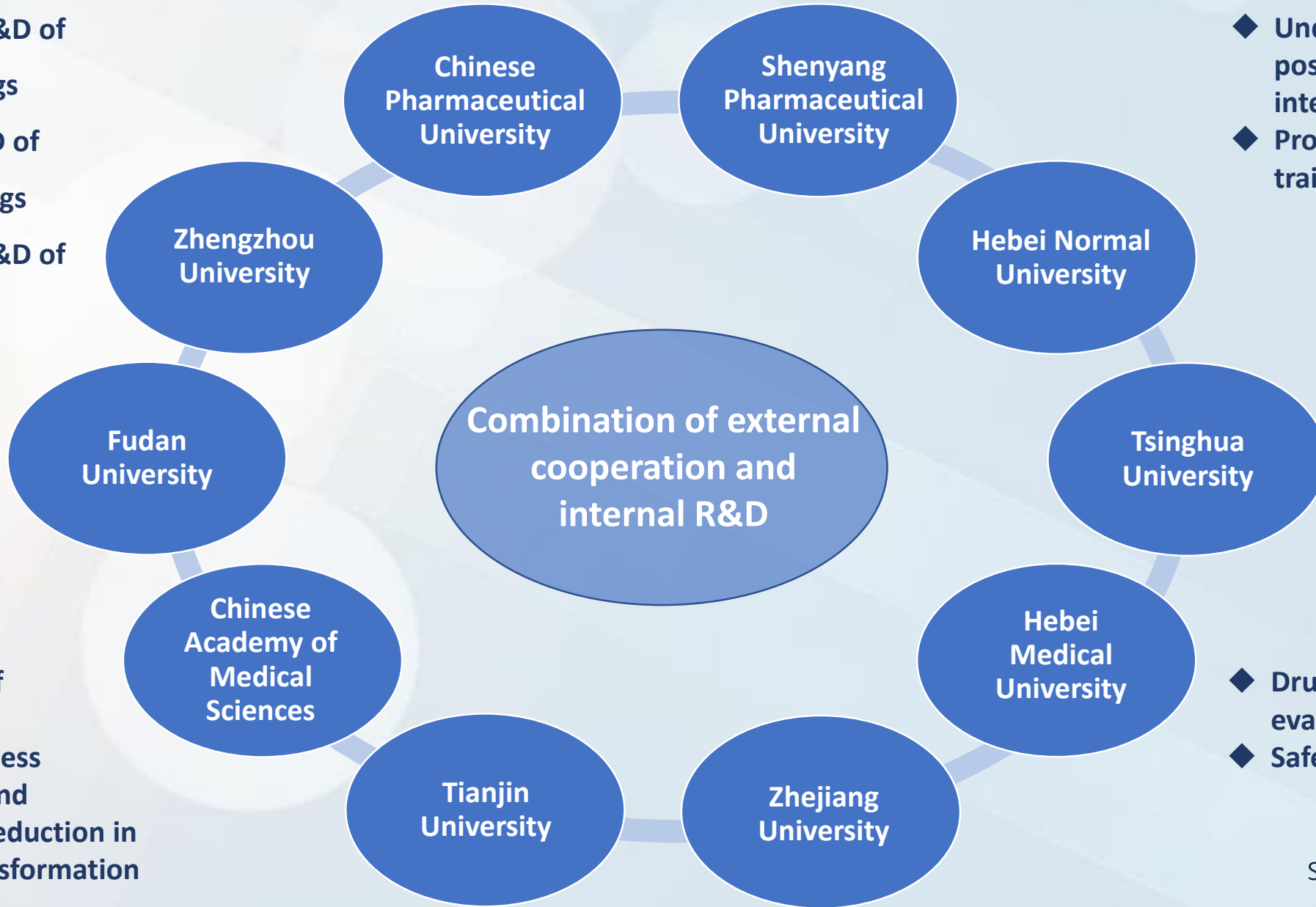
- (a) **Miplatin Liposome** : Type II new drug for liver cancer, actively promote the phase I clinical trials, and is expected to apply for the phase I of clinical trials by the end of 2023
- (b) **TPST Sustained-release preparations** : Hyperuricemia, reduce the number of administrations and fluctuations in blood concentration, in preclinical development
- (c) **WNKL Sustained-release Oral Preparation** : Atrial fibrillation, changing the route of intravenous administration, improving compliance, in preclinical development
- (d) **BWXT Sustained-release Oral Formulation** : Epilepsy, reducing dose frequency, plasma concentration fluctuations, in preclinical development
- (e) **Compound acetaminophen injection** : Antipyretic and analgesic Type II new drug, improving safety, in preclinical development
- (f) **Levonidazole injection** : Anaerobic bacteria, Type II new drug for small water injections, in preclinical development
- (g) **DBT injection** : Ischemic stroke, Type II new drug for injection small water injection, in preclinical development



Strong External Scientific R&D and Industrialization Support Cooperation Institutions

- ◆ Collaborative R&D of Type I New Drugs
- ◆ Technology R&D of Type II New Drugs
- ◆ Collaborative R&D of generic drugs

- ◆ Improvement of Pharmaceutical Production Process
- ◆ Energy Saving and Consumption Reduction in Equipment Transformation



- ◆ Undergraduate and postgraduate internship base
- ◆ Professional master's training

- ◆ Drug efficacy evaluation
- ◆ Safety Evaluation

PART 04

Development Strategies

- Fields for development
- Bioprocessing films
- Intelligent production
- Production chains
- Advanced preparations



Fields for development

Generic Drugs : Increase R&D continuously; focus on high-end bulk drugs; integrate specialized bulk drug + preparations

Innovative Drugs : Clinical trials and commercialization to proceed on schedule ; plan on drug development for children and elderly

Bioprocessing films

On the basis of improving existing cell culture and albumin liquid storage bag film product series, to form the core advantages of domestic bioprocessing films R&D

Intelligent production

Using big data, automation and AI to improve efficiency of production and R&D system;
Automation in some key /special positions;
To build high-end, intelligent and green “lighthouse” factory



Production chains

Expand the Group’ s production chains to achieve integration of bulk drug+ preparations;
Profit maximization for key products

Advanced preparations

Develop high-end/complicated preparations e.g. liposomes, emulsions, microspheres & perforated layered tablets;
Establish a unique competition edge



Prospects for development (2023)



IV : Maintain market leading position; increase proportion of therapeutic and bag forms; potential for higher profits and margins



Ampoule : Continuously enrich in varieties and increase capacity utilization



Bulk pharmaceuticals : Lower cost + increase efficiency; focus on high value-added specialized products; facilitate domestic and international markets



Solid preparations and other preparations : seize opportunities in national centralized procurement · expand the market size and influence on products which have passed consistency evaluation



Medical materials : In-depth development and technology improvement in bio-processing films; speed up the marketing of bio-processing films products



R&D : generic drugs+innovative drugs; external+internal resources; focus on chronic diseases, blood circulatory, emergency & anesthesia, antipyretic & analgesic, new anti-infection and anti-tumor fields



Capital operation : push forward Jiangsu Best transition of listing to Beijing Stock Exchange and Bulk drug business spinoff listing in PRC



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