



Advanced Technologies for Better Quality of Life

Luye Pharma Group

Aug 2018

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Financial Highlights

Strong financial performance

- Revenue grew by 19.1% to 2,204 million RMB
- EBITDA grew by 52.1% to 877 million RMB
- Net profit attributed to shareholders grew by 46.1% to 563 million RMB

Major products keep rapid growth

- Main products: Lipusu, Maitongna, Beixi and Xuezhikang maintain high growth due to leadership in respective fields
- New NDRL inclusion products: CMNa, Sidinuo and Okai benefited from national reimbursement policy and accelerated growth rate
- Continue expanding sales and promotion channel to lower tier hospitals in China and rapidly develop overseas market

Pipeline product progress

- LY03004 pre-NDA in the U.S and China, LY03003 phase III trial and pivotal study in China and the U.S, LY03005 and LY01008 phase III trial in China, New NCE LY01013 and LY03012 filed IND
- New MAH approval for Rivastigmine patch in Switzerland and Thailand, Fentanyl patch in Japan, Buprenorphine patch in Korea and Greece

M&A and collaboration

- Strategic acquisition of Seroquel rights of 51 countries and regions from AstraZeneca
- Strategic acquisition of Apleek global rights from Bayer
- Strategic collaboration with Excel in bi-specific antibody program and with Elpis in CAR-T technology

1. Financial Performance

2. Commercial and Key Products Performance

3. R&D Capabilities and Pipeline Overview

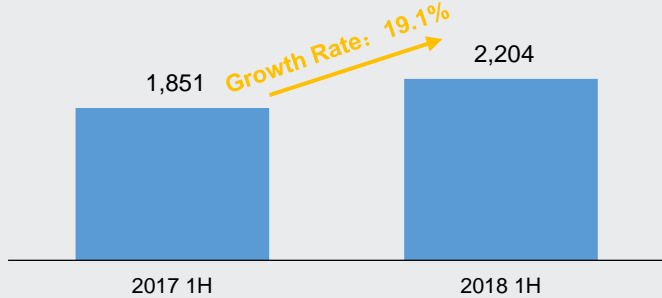
4. Manufacturing Map

5. M&A

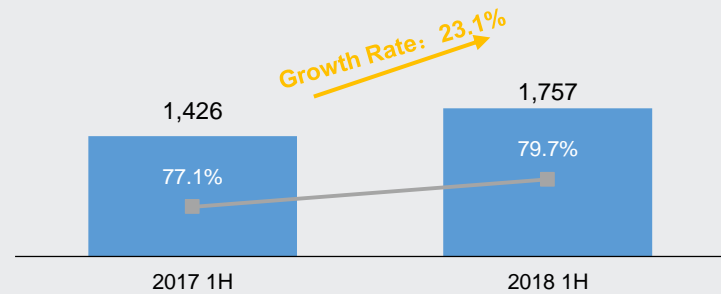
6. Looking forward

Robust Financial Performance

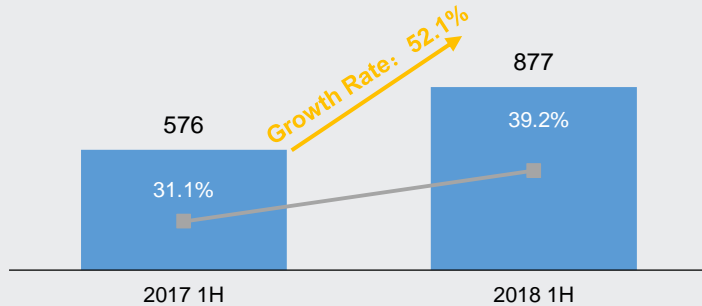
Revenue (RMBm)



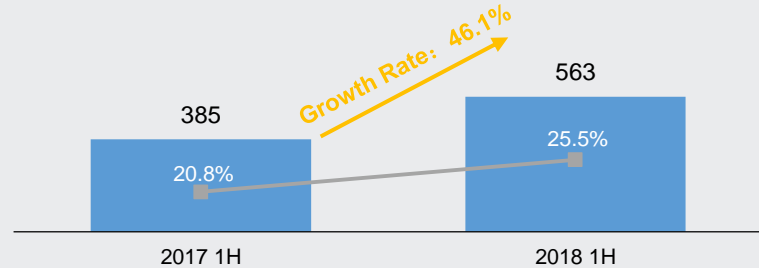
Gross Profit and Gross Profit Margin (RMBm)



EBITDA and EBITDA Margin (RMBm)



Net profit attributed to shareholders (RMBm)

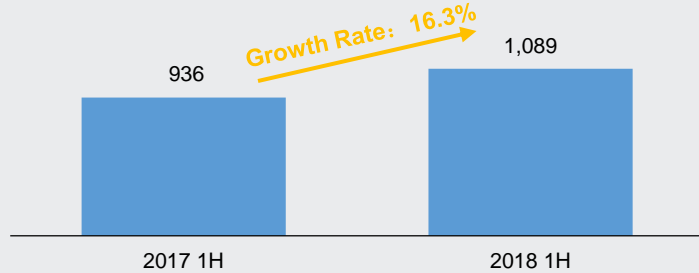


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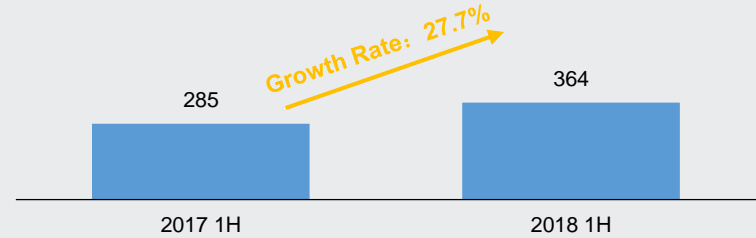
1. Normalized EBITDA was RMB650M and Normalized EBITDA Margin was 36.4% in 2017 1H.
2. Normalized Net Profit was RMB459M and Normalized Net Profit Margin was 24.8% in 2017 1H.

Performance Across Product Portfolios

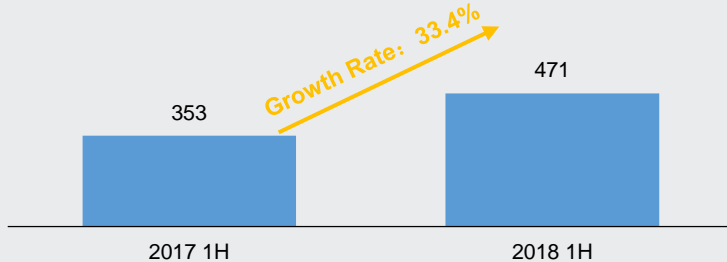
Oncology (RMBm)



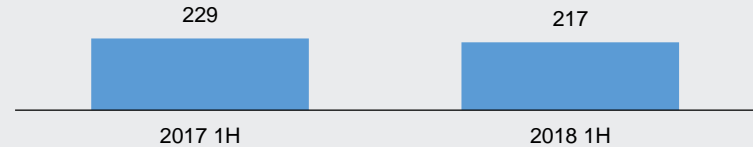
Cardiovascular System (RMBm)



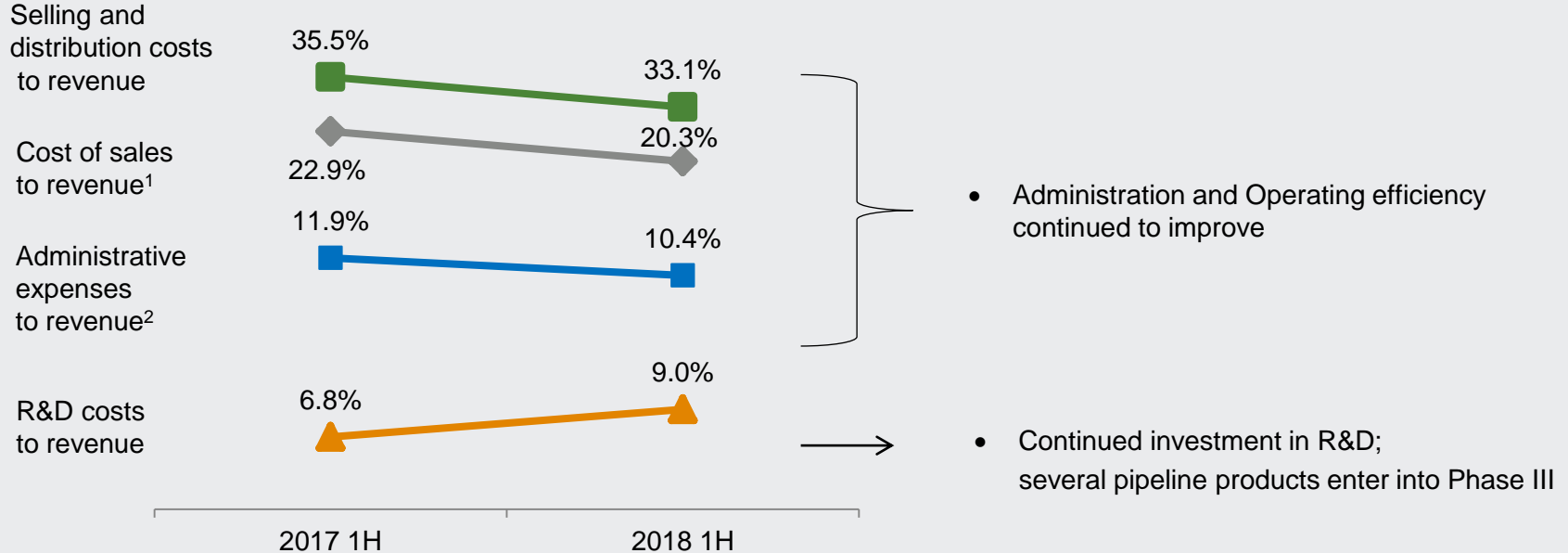
Alimentary Tract & Metabolism (RMBm)



Central Nervous System (RMBm)



Operating Costs

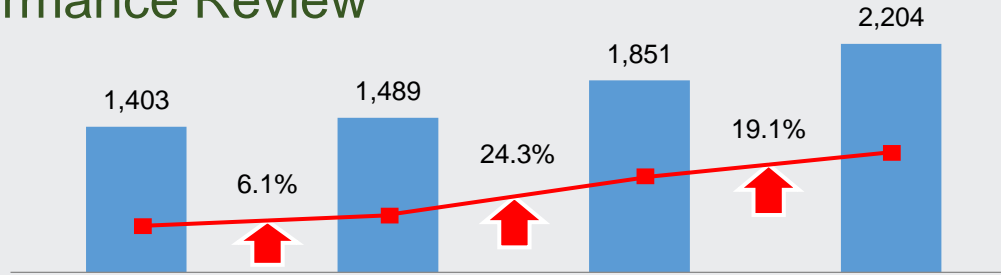


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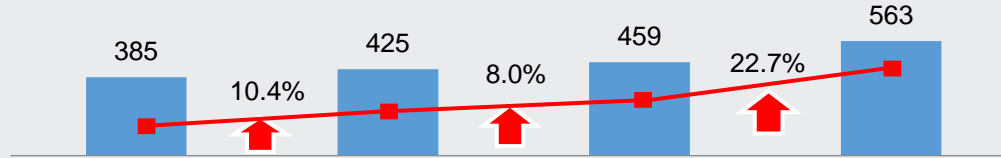
1. After deducting one off amortization of Acino's inventory, the cost of sales as a percentage of revenue would be 20.8% in 2017 1H
2. After deducting one off expenses, the administrative expenses to revenue ratio would be 10.2% in 2017 1H

Financial Performance Review

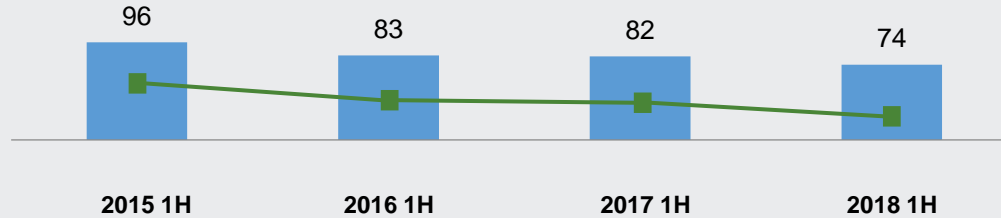
Revenue
(RMBm)



Normalized Profit
Attributed to
Shareholders
(RMBm)



Accounts Receivable
Turnover Days
(Days)



1. Financial Performance
- 2. Commercial and Key Products Performance**
3. R&D Capabilities and Pipeline Overview
4. Manufacturing Map
5. M&A
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Marketing Network

- Marketing network covers large global pharmaceutical markets and fast growing emerging markets
- China market: Marketing strategies are determined at group level and executed by the sales teams with support from functional departments. Products distributed in more than 12,000 hospitals and medical institutions
- Overseas market: A highly engaged full-service team covering marketing, pharmacovigilance, business development functions, has established deep relationships with dozens of customers.

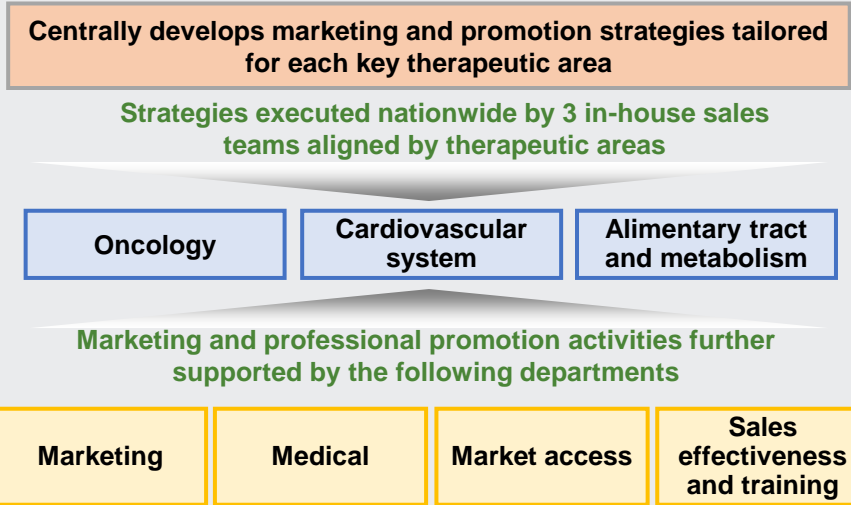


Growing Sales and Marketing Network in China

Centrally developed marketing and promotion strategies are executed nationwide by internal sales teams and 3rd-party promoters in China . In addition, medical department provides market & product information and training to further support marketing efforts.

Marketing and Promotion Model

- Marketing & promotion activities with strong emphasis on academic promotion



Sales and Distribution Model

- Sales and promotion team consisting of over 1,350 in-house sales representatives, Nationwide distribution network of over 1,380 distributors
- Over 900 key opinion leaders
- Products sold to over 12,580 hospitals and other medical institutions across 30 provinces, municipalities and autonomous regions

Hospital Class	# of Hospitals Covered	% of Total Hospitals Covered in Respective Class
Class III (largest)	About 1,480	78.0%
Class II	About 3,600	52.0%(1% ↑)
Class I and other	About 7,500	45.0%(1% ↑)

distributors

Key Products' Market Share

Products (Generic Name)	Indications	2018 1H Ranking ¹	2018 1H Market Share (%) ¹
Oncology			
Lipusu (Paclitaxel liposome injection)	Ovarian cancer, cervical cancer, breast cancer and non-small-cell lung cancer	1	34.8% ²
CMNa (Sodium glycididazole injection)	Sensitiser in connection with radiotherapy for tumours	Exclusive	100.0% ³
Cardiovascular System			
Xuezhikang (Xuezhikang)	Hypercholesterolaemia	1	96.7% ⁴
Maitongna (Sodium aescinate injection)	Treatment of cerebral edema and edema caused by trauma or surgery and venous reflux disorder	1	65.5% ⁵
Alimentary Tract & Metabolism			
Bei Xi (Acarbose capsules)	Adjunct to diet for lowering blood glucose in patients with diabetes	3	7.5% ⁶
Central Nervous System			
Rivastigmine Patch	Mild to moderate dementia of the Alzheimer's type and dementia due to Parkinson's disease	2	22% ⁷

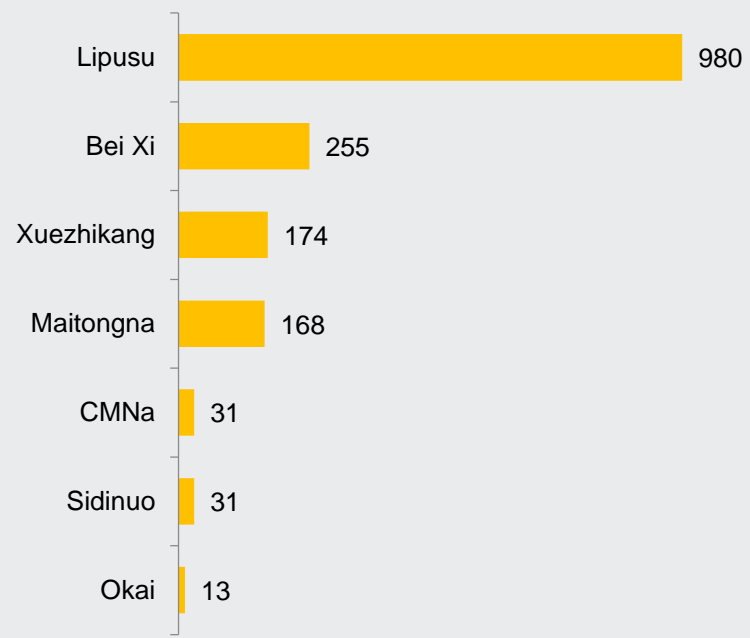
Notes:

- 1 According to IQVIA 2018 1H data
- 2 Paclitaxel (including Docetaxel) market in China
- 3 Cancer radio-sensitizer market in China
- 4 Red Yeast Rice Product market in China

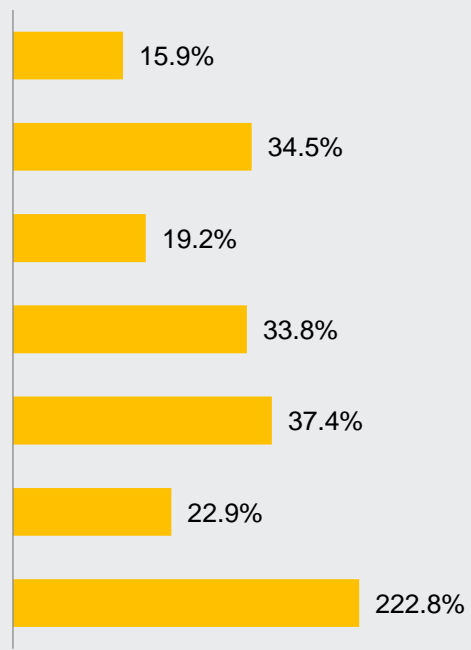
- 5 Sodium aescinate product in China
- 6 Acarbose product in China
- 7 Rivastigmine Patch market in U.S and Europe by volume in 2018 1Q

Key Products in China

2018 1H Sales Value (Mil RMB)



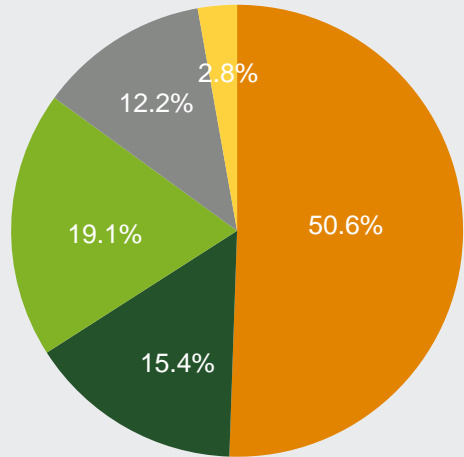
Increase rate



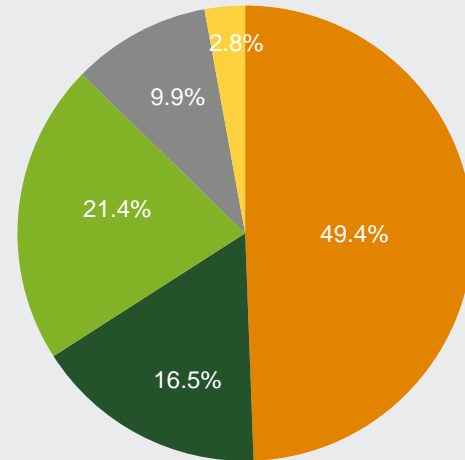
Note: from company financial data

Proportionate key TAs

Revenue Breakdown by Therapeutic Area for 2017 1H



Revenue Breakdown by Therapeutic Area for 2018 1H



Oncology Cardiovascular metabolism CNS Others

Lipusu keep solid growth with more certainty

- | | |
|------------------------------------|---|
| Key Differentiating Factors | <ul style="list-style-type: none">• Reduces risk of life-threatening allergic reactions commonly associated with other paclitaxel products• Enables higher dosage levels and enhances efficacy |
|------------------------------------|---|

- | | |
|--------------------------------------|--|
| 2018 1H Market Share in China | <ul style="list-style-type: none">• Market share in paclitaxel (including Docetaxel) formulations: 34.8% by value, 18.8% by volume |
|--------------------------------------|--|

- | | |
|------------------------|--|
| Medical Affairs | <ul style="list-style-type: none">• Phase IV clinical trial for the treatment of lung squamous carcinoma |
|------------------------|--|

- | | |
|--------------------------------|---|
| Intellectual Properties | <ul style="list-style-type: none">• The first and only paclitaxel liposome product approved for sale globally• Patented composition and formulation method(valid till 2020) |
|--------------------------------|---|

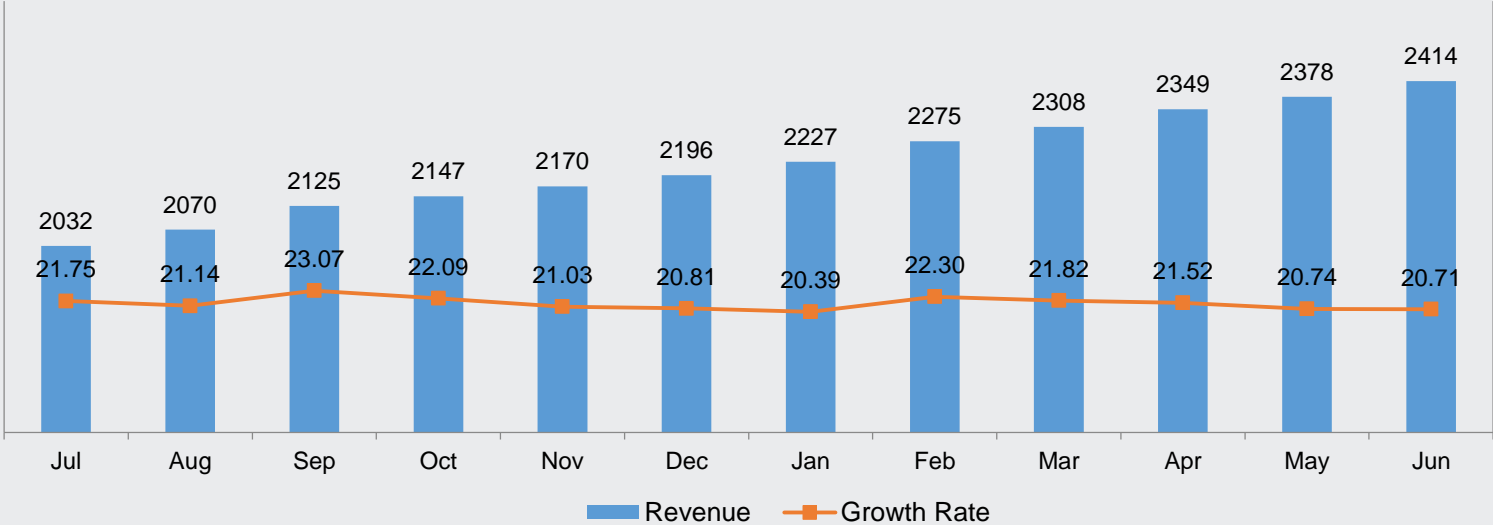
- | | |
|--------------------------------|--|
| 2018 1H Market Coverage | <ul style="list-style-type: none">• Sold to 1200 (3.6% ↑) hospitals in 30 provinces |
|--------------------------------|--|

- | | |
|--------------------------|--|
| Medical Insurance | <ul style="list-style-type: none">• Included in 10 PDRLs (Jiangsu, Shandong, Hunan, Chongqing, Guangdong, Sichuan, Shanxi, Jiangxi, Xizang, Gansu)• Won't participate in the negotiation list of 18 oncology products in 2018 |
|--------------------------|--|

Key Oncology Product — Lipusu

Lipusu MAT Revenue (RMBm) and Growth (%)
Jul 2017 – Jun 2018

Source: IQVIA data



Patch Business Progress

New launches YTD

Product	Country
Rivastigmine 1D	Israel
Rivastigmine 1D	Portugal
Rivastigmine 1D	Switzerland
Fentanyl 3D	Japan

new agreements signed YTD

Product	Country
Rivastigmine 1D	Switzerland
Buprenorphine 3D	Greece
Rivastigmine 1D	Thailand
Rivastigmine 1D	New Zealand
Fentanyl 3D	Taiwan

New launches to come 2018/2019

Product	Country	Time
Buprenorphine 3D	Greece	2018
Rivastigmine 1D	Switzerland	2018
Rivastigmine 1D	Thailand	2018
Rivastigmine 1D	Portugal	2018
Rivastigmine 1D	China	2019
Buprenorphine 3D	Korea	2019
Rivastigmine 1D	UK, ES, PT	2019
Rivastigmine 1D	Italy	2019
RIV, BUP, FNT	Chile	2019
Rivastigmine 1D	New Zealand	2019
Rivastigmine 13.3	EU	2019
Buprenorphine 3D	Taiwan	2019

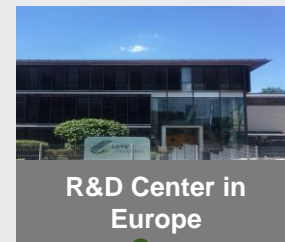
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Global R&D

- R&D centers in China, U.S. and Europe.
- About 500 R&D professionals, unique product offering enabled by increased R&D capability and efficiency through integration of global R&D system and resources



- Key R&D Capabilities :
International R&D Collaboration
Exploratory Study for Innovative Drugs



- The first state key laboratory of long-acting and targeting drug delivery system
- Key R&D Capabilities :
Long-acting and extended release technology
Liposome and Targeted Drug Delivery Technology
Biological Antibody Technology



- Key R&D Capabilities :
Transdermal Drug Delivery Technology

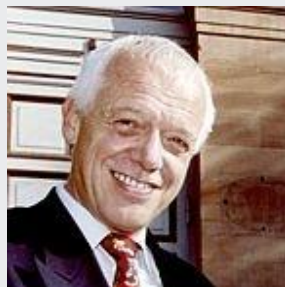
Advisory Board



Robert Langer, PhD

David H. Koch Institute
Professor at
the Massachusetts Institute
of Technology (MIT).

Served as a member of the
FDA's SCIENCE Board
from 1995 -- 2002.



Thomas H. Kissel, PhD

Professor and director of Philipps University of
Marburg in the institute of Pharmaceutical
Technology & Biopharmacy; Former director of
Controlled Release Society

Awards: Maurice-Marie Janot Award; Controlled
Release Society Founders Award

The Innovator of Octreotide Microspheres

Expertise in Drug Transportation and Non-viral
Gene Delivery System



Dr. Haifeng Lin

Stem cell scientific advisor,
Eugene Higgins Professor of
Cell Biology

Professor of Genetics and of
Obstetrics, Gynecology, and
Reproductive Sciences

Director, Yale Stem Cell
Center, Yale University



Dr. Guangping Gao

Gene Therapy scientific advisor,
Professor Department of
Microbiology and Physiological
Systems

Scientific Director UMMS-China
Translational Research
Initiatives, University of
Massachusetts



Dr. Jianguang Li

Professor of School of
Medicine at the
OhioState University

Expertise in
pharmaceutical
formulation and
industrialization

Platform and Technology

Long-acting and Extended Release Technology

(>11 investigational products)

Microsphere, Nano-particle and Implant technology

- Customized drug release rate and period according to specific clinical needs
- Reduce frequency of drug in-take
- Balanced drug release to improve efficacy and to reduce side effects

Liposome and Targeted Drug Delivery

(>5 investigational products)

Targeted drug delivery and liposome technology

- Efficacy improvement of marketed drugs
- Toxicity reduction
- Site-specific targeting

Transdermal Drug Delivery System

(>8 investigational products)

- Constant and stable release of active ingredient to reduce side effects
- Drug release interrupted by removing the patch
- Patient compliance enhancement
- Applicable to various indications

New Compounds

(>10 investigational products at the early R&D phase)

Discover and develop new compounds by improving existing pharmaceuticals. Main R&D programs including:

- Rapid simulation and follow-up
- Comparative research
- Deficiency reduction

Biological Antibody Technology

(Joint development with partners, with 2 investigational drugs under clinical trials stage)

- China's first drug R&D platform for the whole human monoclonal antibody drug based on the transgenic mice with human antibody (LuyeMab Mice)
- Integrated R&D and manufacturing capacity from DNA to biomedicine
- GMP standard pilot plant for antibodies

■ A strict screening process for product candidates by R&D evaluation council

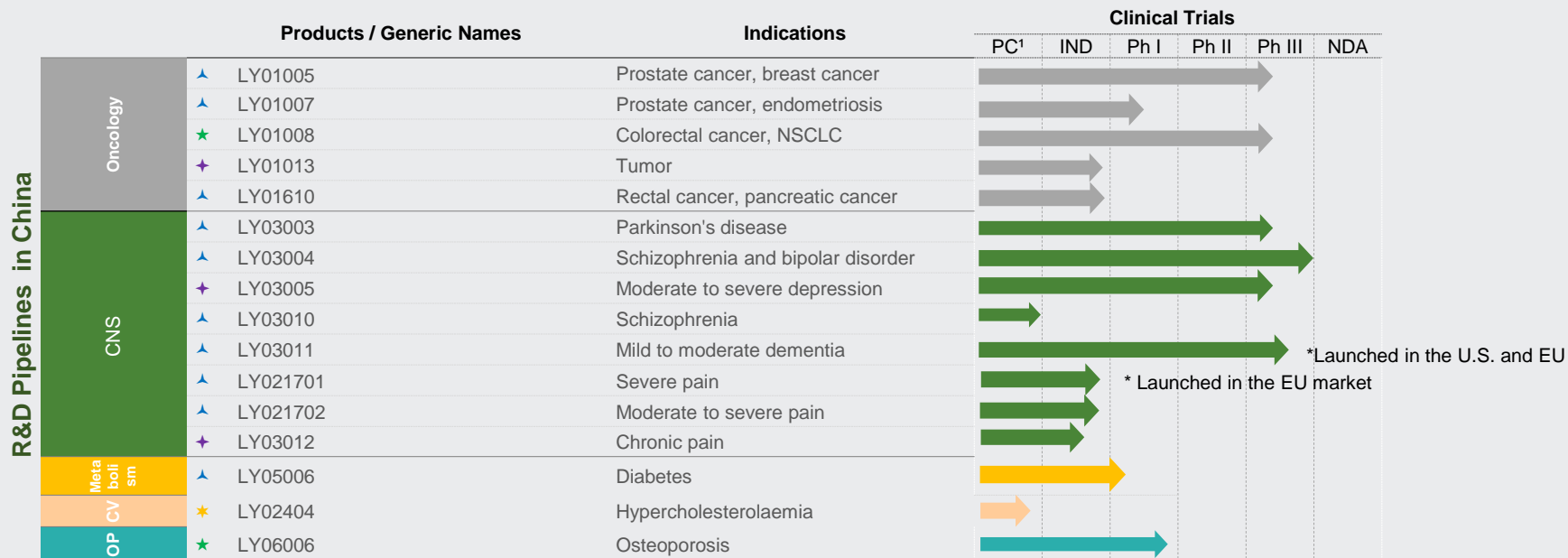
Overseas R&D Pipelines

- As one of the first Chinese pharmaceutical companies conducting clinical trials in the global market, Luye Pharma has several investigational products in CNS and Oncology therapeutic areas under clinical trials in the U.S and Europe.

Therapeutic Areas	Indications	Product No.	Progress						Countries
			PC	IND	Ph I	Ph II	Ph III	NDA	
CNS	▲ Parkinson's disease	LY03003							USA
	▲ Schizophrenia and bipolar disorder	LY03004							USA
	✦ Moderate to severe depression	LY03005							USA
	▲ Mild to moderate dementia	30410							EU
	▲ Schizophrenia	LY03010							USA
Oncology	▲ Prostate cancer	LY01005							USA
	✦ Oncology Immune	LY01013							USA
Cardiovascular	★ Hypercholesterolaemia	LY02405							USA
orthopaedics	★ Osteoporosis	LY06006							USA

R&D Pipelines in China

■ R&D pipelines of 27 drug candidates in China, including 9 oncology drugs , 14 CNS drugs, 4 CV and metabolism drugs.



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- 6. Looking forward**

Manufacturing Sites

- 7 manufacturing sites with 30+ production lines
- International practices are followed from product design to construction of facilities
- One of the largest independent TDS manufacturers in Europe, boasting highly sophisticated process and high barrier technologies



Quality Management System

CHINA



- Passed EU GMP inspections
- Passed Australia's TGA GMP inspections
- Passed China 2010 GMP inspections
- Obtained ISO9001:2008 QMS certification/ISO14001:2004 EMS certification
- Obtained OHSAS18001:2007 certification
- Obtained CNAS certification

EUROPE



- One of the largest independent TDS manufacturers in Europe, boasting highly sophisticated process and high barrier technologies
- Passed FDA GMP inspections
- Passed EU GMP inspections

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Luye Acquisition of Seroquel


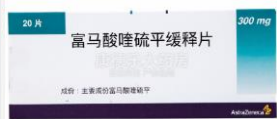
On June 28th, Luye Pharma Hong Kong (Luye Pharma Group's wholly owned subsidiary) completed acquisition of Seroquel (quetiapine fumarate, immediate release, IR) and Seroquel XR (extended release formulation)- AstraZeneca UK Limited's (AZ) CNS product marketed in 51 countries and regions.

The consideration of US\$546 million is payable by Luye Hong Kong in four instalments and the first instalment is US\$260 million. According to the sales data provided by the seller, the total revenue of the series of products from the above markets is US\$148 million, half of which is contributed by Asia market.

The Transferred Assets include:

- The relevant patents, manufacturing know-how and formulation know-how of Seroquel and Seroquel XR
- The registration information of Seroquel and Seroquel XR in the above 51 countries and regions
- The advertising and promotional materials, medical materials, domain names or URLs of Seroquel and Seroquel XR in the above 51 countries and regions
- The relevant agreements, existing finished goods and inventory in the above markets
- The exclusive, grant a perpetual, sub-licensable royalty-free license include trademarks, knowhow, records and regulatory information

Introduction of the Products

	Description	Indications	Market Positioning
<p>Quetiapine fumarate</p> 	Seroquel 25mg 2*10's	<ul style="list-style-type: none"> Schizophrenia Bipolar disorder (BPD) Moderate to severe manic episodes in bipolar Major depressive episodes in bipolar disorder Prevention of recurrence of manic or depressed episodes in patients with bipolar disorder who previously responded to quetiapine treatment. 	<ul style="list-style-type: none"> Multi brand in global market Market leader in China Market
	Seroquel 200mg 2*10's		
	Seroquel 300mg 2*10's		
<p>Quetiapine fumarate (extended release formulation)</p> 	Seroquel XR 50mg 2*10's		<ul style="list-style-type: none"> Exclusive in many countries and regions Exclusive in China market
	Seroquel XR 200mg 2*10's		
	Seroquel XR 300mg 2*10's		

☆ In July 2018, CFDA has approved the inclusion of “depression arising from bipolar disorder” under the indication for Seroquel XR.

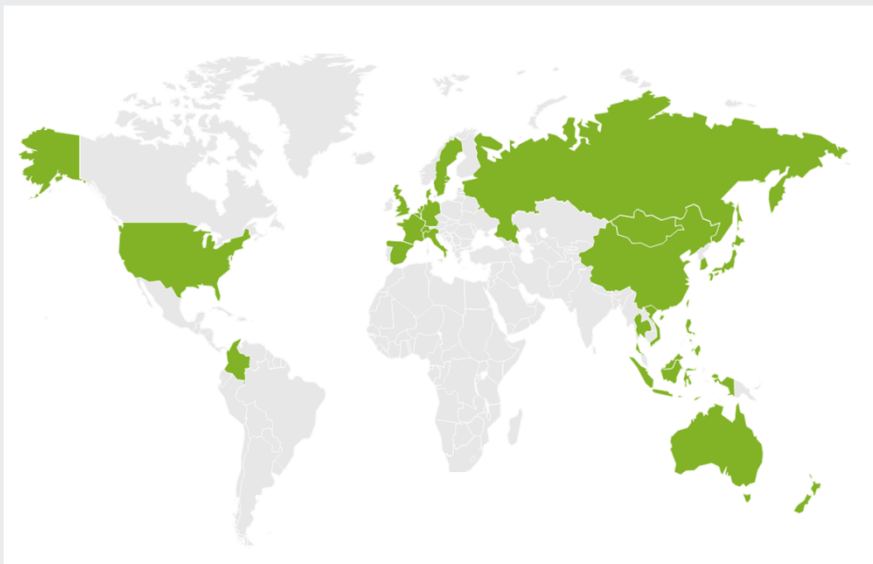
Wide Indication of Quetiapine

The total number of patients with bipolar disorder in the world is estimated to be over 60 million.

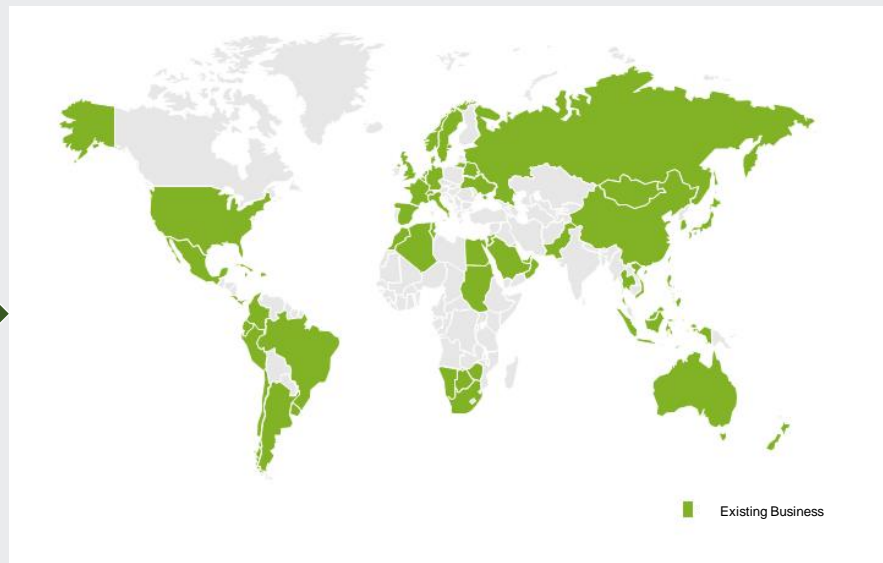
Drugs	Bipolar Depression		Bipolar Vesania		Mixed Attack	
	Acute Phase	Maintenan- ce Phase	Acute Phase	Maintenan- ce Phase	Acute Phase	Maintenan- ce Phase
Atypical antipsychotics						
Aripiprazole			√	√	√	√
Olanzapine			√	√	√	√
Quetiapine	√	√	√	√		√
Risperidone			√		√	
Ziprasidone			√		√	

Market Expansion

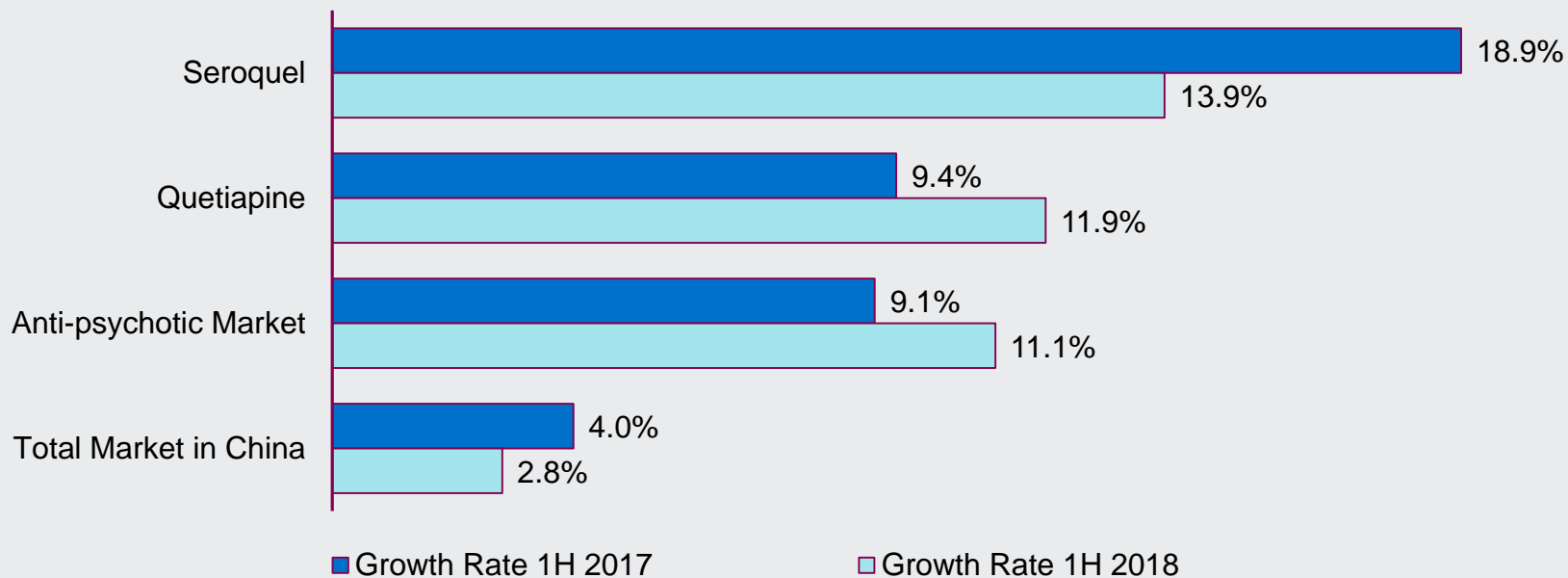
Before M&A



After M&A



Seroquel's Performance in China Market



Major Highlight

Luye Pharma has established an efficient operation management system and a wide-ranging business networks in the world, providing a strong guarantee for the accessibility of Seroquel in the global market. The company will also invest more resources and enhance market development. The inclusion of Seroquel will create synergy with Luye's CNS pipeline products and strengthen the competitive advantage of the company in the therapeutic areas.

✓ Profit accretion

In 2017, the regional business of Seroquel acquisition was US \$148 million. The promotion cost was limited, and the sales profit rate was high, so it brings sizable profit.

✓ Sales synergy

Seroquel's extensive global sales network and professional academic promotion materials will speed up the establishment of CNS team of Luye Pharma and lay a good commercial foundation for the launch of new products such as Risperidone microspheres and so on.

✓ Manufacturing promotion

Seroquel XR tablet has advanced manufacturing technology. The technology is first transferred to China this time and Luye Pharma will improve its production capacity and lay the foundation for its global production and quality system.

✓ More potential cooperations:

Taking over mature products from MNC, with a strong, reliable system of marketing and compliance, will bring more opportunities to cooperate or buy product lines from other MNCs in the future.

Luye Acquisition of Apleek

- Luye Pharma AG and Luye Supply AG, have reached an agreement with Bayer AG to acquire the global rights to Apleek
- Apleek is a combined hormonal contraceptive transdermal patch containing ethinyl estradiol and gestodene, co-developed by Luye Pharma and Bayer
- Luye Pharma is planning to use its dedicated manufacturing unit for hormone containing patches in Europe to supply the market
- The acquired assets include Apleek's global patents, MAHs, registration information, trademarks, URLs, relevant commercial materials, relevant data and intellectual properties. The drug has been approved in Switzerland and granted patents in the US, Europe, China, Japan etc.

Luye Pharma is confident in the potential of Apleek and planning to launch it in the US, Europe, China, Japan and other markets with great potential. The addition of Apleek is able to enrich Luye's product portfolio of TDS, enhance its leadership in TDS platform, and get the business into more overseas markets.

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Key Pipeline Outlook

Expected launching year	Product name	Country	TA	Status
2018	▲ Buprenorphine 3D	Korea, Greece	Pain relief	MAH approval
	▲ Fentanyl patch 3D	Japan	Pain relief	MAH approval
	▲ Rivastigmine patch 1D	Switzerland, Thailand	CNS	MAH approval
2019	▲ LY03004	China, US	CNS	NDA preparation
	▲ Rivastigmine patch multi day	EU	CNS	Pivotal Study
	▲ Rivastigmine patch 1D	China	CNS	NDA preparation
2020	▲ LY03004	EU, Japan	CNS	Phase I trial/ IND preparation
	▲ LY03003	China, US	CNS	Pivotal study
	▲ Buprenorphine 3D,7D	China	Pain relief	Project approval
	▲ Rivastigmine patch multi day	US, Japan, China	CNS	IND preparation
2021	✦ LY03005	US, EU, China	CNS	Phase III preparation
	▲ LY03003	EU, Japan	CNS	IND preparation
	▲ LY01005	Japan, China	oncology	Phase I in China & US
	★ LY01008	China	oncology	Phase III
	▲ LY01010	China, US	CNS	IND preparation/ IND application

Four Strategies to Drive Future Growth

Global R&D

- Focus on **CNS, Oncology, Metabolism, Cardiovascular** in China
- Focus on **CNS and Oncology** in the overseas markets
- Focus on both new drugs innovation and formulations innovation, with biopharmaceutical and cutting-edge biological technologies as the priorities to expand R&D capabilities from identified drug target to innovative new target around the world
- Gradually increase investment in R&D, with the goal of building up **differentiated innovation capability** in R&D

- Build up manufacturing sites in China with **global quality standards** in the short term.
- Build up overseas manufacturing sites with **global supply chain management system, overall planning of the production capacity** in the long term
- Build up global manufacturing footprints and management capability and resources

Global Manufacturing

Global Market

- Strengthen marketing and branding for the Chinese market, set up a national network, expand to grassroots markets and increase market share
- Build up **international marketing platforms** with flexible market entry model
- Invest in brand building, promote Luye Pharma's image on global market through current product brand leverage

M&A

- A series of M&As to be carried out in **China, US, EU and Japan**.
- M&A deals focus on **identifying products with great potential**, to enrich the current R&D pipelines and enhance **business operation** capabilities
- Strengthen the capabilities of **financing, M&A and integration**

To Become One of the Top 50 Global Pharmaceutical Companies by 2025



Thank You for Your Attention

Luye Pharma Group

Excellence through Innovation

For more information, please visit http://www.luye.cn/lyye_en/