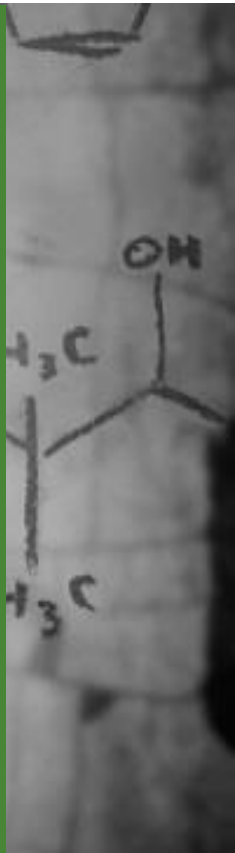




# Luye Pharma Group's Internationalization Strategy and Experiences

Swiss-Chinese Life Sciences Forum 2018

Novartis Campus, Sept 13th



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# About Us



## Luye Pharma Group

**Luye Pharmaceutical Group** (02186.HK), a member of Luye Life Sciences Group, is an international pharmaceutical company dedicated to the R&D, manufacturing and sale of innovative medications.

## Luye Life Sciences Group

Founded in 1994, the **Luye Life Sciences Group** is committed to providing high-quality innovative products and professional services in the life sciences area with the mission of “Advanced Technologies for Better Quality of Life”. The Group is comprised of three major business divisions: Luye Pharma, Luye Medical and Luye Investment.



Luye Medical is the regional healthcare services arm of Luye Life Sciences Group, with more than 8,000 FTE and HQ in Singapore.

## China



Several specialized  
medical centers  
in Shanghai, Yantai,  
Chongqing, Chengdu

## Singapore



2<sup>nd</sup> largest provider of  
private oncology  
healthcare services



## Korea



Women and  
Children's Health  
& Plastic Surgery



## Australia



3<sup>rd</sup> largest corporate  
private healthcare  
operator in Australia



## Investment and Development of New Technologies

Investment sector focuses on research, incubation and industrialization of life science technologies as well as products, making effort to achieve precise medicine and cure serious diseases.



# Luye pharma : Key Products

Products	Indications	2018 1H Ranking <sup>1</sup>	2018 1H MS (%) <sup>1</sup>
<b>Oncology : 50 % of total revenue</b>			
<b>Lipusu</b> ( <i>Paclitaxel liposome injection</i> )	Ovarian cancer, cervical cancer, breast cancer and non-small-cell lung cancer	1	34.8% <sup>2</sup>
<b>CMNa</b> ( <i>Sodium glycididazole injection</i> )	Sensitiser in connection with radiotherapy for tumours	Exclusive	100.0% <sup>3</sup>
<b>Cardiovascular System : 16,5 % of revenue</b>			
<b>Xuezhikang</b> ( <i>Xuezhikang</i> )	Hypercholesterolaemia	1	96.7% <sup>4</sup>
<b>Maitongna</b> ( <i>Na aescinate injection</i> )	Treatment of cerebral edema and edema caused by trauma or surgery and venous reflux disorder	1	65.5% <sup>5</sup>
<b>Alimentary Tract &amp; Metabolism : 21,5% of revenues</b>			
<b>Bei Xi</b> ( <i>Acarbose capsules</i> )	Adjunct to diet for lowering blood glucose in patients with diabetes	3	7.5% <sup>6</sup>
<b>Central Nervous System : 12,8 % revenues</b>			
<b>Rivastigmine Patch</b>	Mild to moderate dementia of the Alzheimer's type and dementia due to Parkinson's disease	2	22% <sup>7</sup>

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

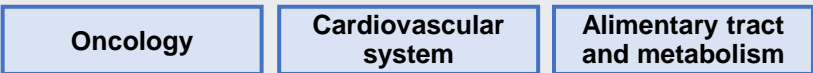
Centrally developed marketing and promotion strategies are executed nationwide by internal sales teams and 3rd-party promoters in China .

## Marketing and Promotion Model

- Marketing & promotion activities with strong emphasis on academic promotion

**Centrally develops marketing and promotion strategies tailored for each key therapeutic area**

Strategies executed nationwide by 3 in-house sales teams aligned by therapeutic areas



Marketing and professional promotion activities further supported by the following departments



## 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

# Platforms and Technologies

## Liposome and Targeted Drug Delivery

( >5 investigational products )

- 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

## Long-acting and Extended Release Technology

( >11 investigational products )

Microsphere and nano-particle 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

## 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)

- Integrated R&D and manufacturing capacity from DNA to biomedicine
- GMP standard pilot plant for antibodies
- Novel bispecific monoclonal antibody platform

## CAR-T Immunotherapy

Revolutionize cancer treatment with a potential to cure

- Next generation CAR-T Immunotherapy therapeutics
- Potentially improved efficacy
- Mitigate side-effects
- Opportunity to treat solid tumors

## Gene Therapy

Potential cure for genetics diseases

- Targeting gene specific rare diseases
- Precision gene editing
- Safety proved virus delivery technology
- No need of frequent administration

## Stem Cell Therapy

Regenerate diseased tissues

- Focus on neuro-degeneration diseases
- Novel therapeutic approach
- Ability to proliferate and create normal functional tissues
- Long sustainable therapeutic effects

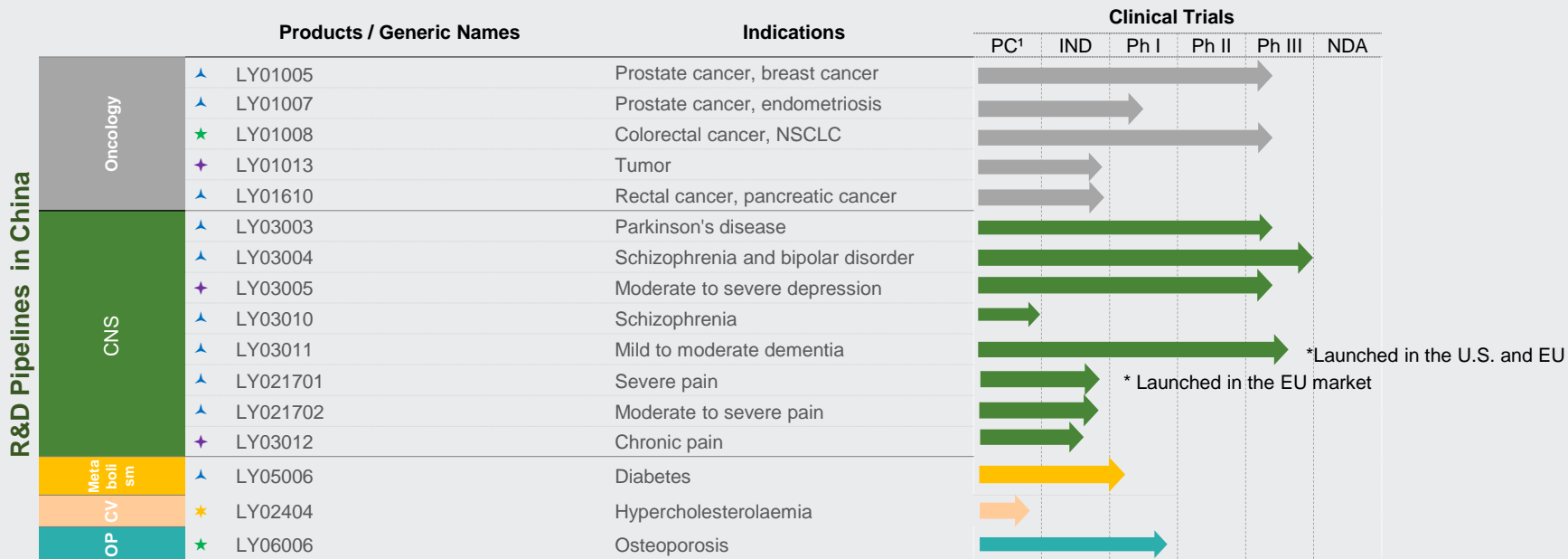
### Advanced Drug Delivery System

### New Gene & Cell Therapy Technologies



# Luye Pharma : R&D Pipeline in China

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



# Internationalization : Key growth drivers

2013/14 : Set up international development pipeline and global capacities



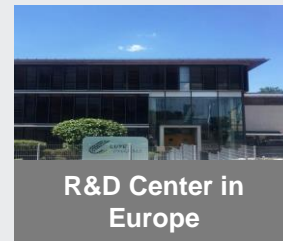
# Step 1: Luye Pharma opening R&D Centers

- 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



R&D Center in China

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



R&D Center in Europe

- 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

R&D Center in U.S.



- Key R&D Capabilities :  
Transdermal Drug Delivery Technology

# Step 1 : set up International R&D Pipeline

- 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/EUR
	▲ Schizophrenia and bipolar disorder	LY03004	→						USA/EUR
	✦ Moderate to severe depression	LY03005	→						USA
	▲ Mild to moderate dementia	30410	→						EU
	▲ Schizophrenia	LY03010	→						USA/EUR
Oncology	▲ Prostate cancer	LY01005	→						USA
	✦ Oncology Immune	LY01013	→						USA
Cardiovascular	★ Hypercholesterolaemia	LY02405	→						USA
orthopaedics	★ Osteoporosis	LY06006	→						USA

# Internationalization : Key growth drivers

Step 1 : Set up international development pipeline and global capacities

Step 2 : Develop international business operations & “CNS platforms”



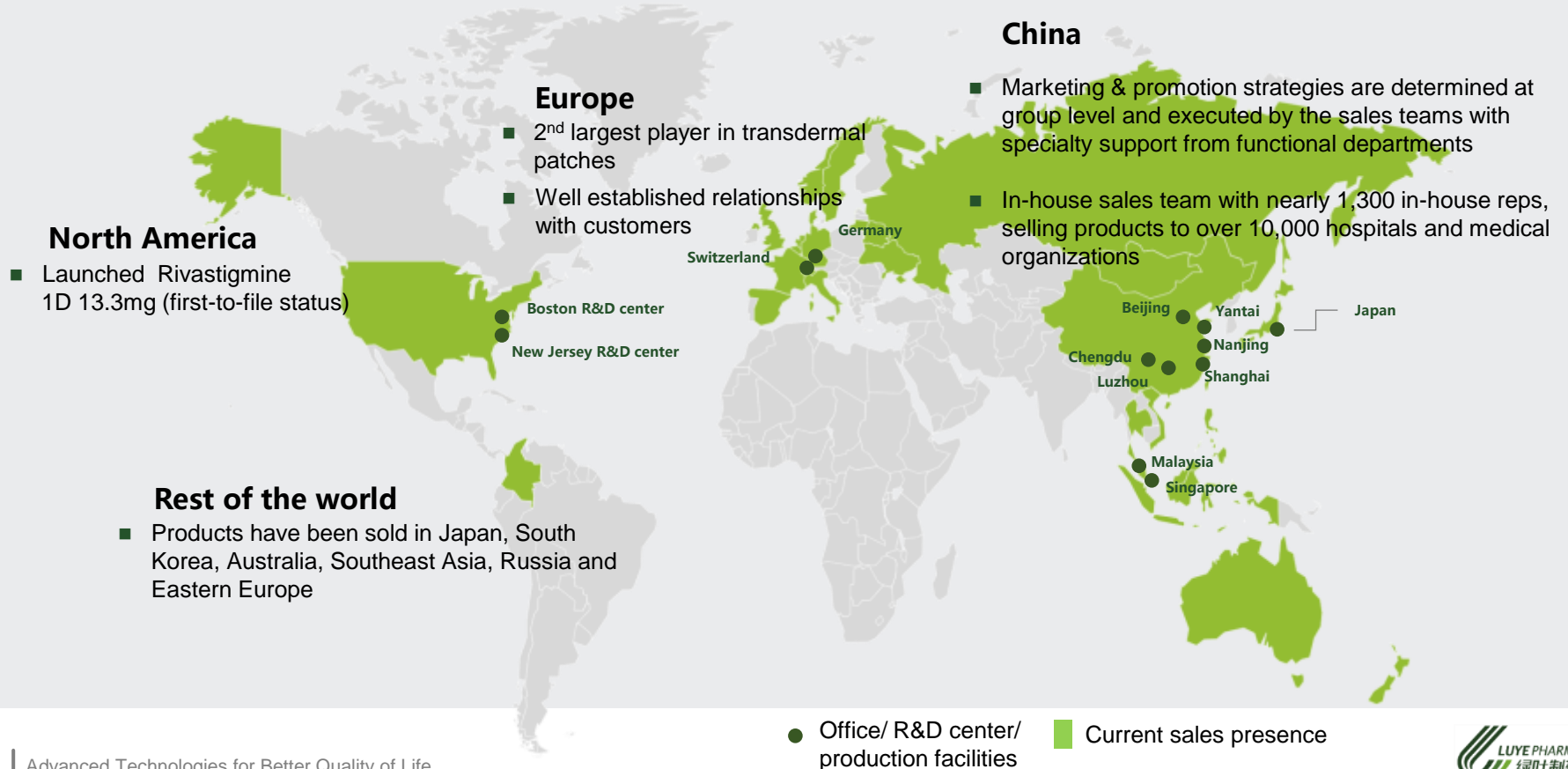
# 2016 : Acquisition of TDS Business from Acino



In 2016, Luye Pharma completed the acquisition of TDS and Implant business, to further strengthen Luye Pharma's advantages in the area of controlled release technology and pave the way for Luye's expansion into the global markets.

Marketed Products	Indication
<b>Buprenorphin TDS</b>	Moderate to severe cancer pain and severe pain which does not respond to non-opioid analgesics
<b>Fentanyl TDS</b>	For the treatment of chronic pain
<b>Rivastigmine TDS</b>	Mild to moderate dementia of the Alzheimer's type and dementia due to Parkinson's disease
<b>Rivastigmine TDS US</b>	Mild to moderate dementia of the Alzheimer's type and dementia due to Parkinson's disease

# Step 2: Develop international Business network



# Internationalization : Key growth drivers

- Step 1 : Set up international development pipeline and global capacities.
- Step 2 : Development of international business operations & commercial
- Step 3 : Initiate M&A with focus on CNS and Oncology franchises.





HONG KONG, May 27, 2018 /PRNewswire/ -- Luye Pharma Group recently announced their acquisition of AstraZeneca's core CNS products - Seroquel and Seroquel XR.

### Strategy behind the Acquisition

- Set up commercial foundation in 50 countries
- Building a product portfolio with a global competitive edge in BPD and Schizophrenia franchise \*



# Luye Pharma Group internationalization to date...

Within the top 15 Chinese Pharmaceutical company in PCR

# 2<sup>nd</sup> ranking Chinese Pharmaceutical Company for its international Business activities

RnD Pipeline with 10 international programs in USA and Europe and Japan

Commercial organization in 6 key markets overseas and network of partners in 30 countries

Int'l sales reach ca 200 MUSD in 2018

# Keys challenges for international expansion

Integration period with differences in perception , approaches and perspectives

In and outbound communication channels and network

Identifying the right resources required (“local experience” does not necessarily align with international)

Cross culture/functional e.g “directness”.

Labor Market Restrictions detrimental to efficient problem solving capabilities ...



**Thank You**

**Luye Pharma Group**

Excellence through Innovation

For more information, please visit [www.luye.cn](http://www.luye.cn) and [www.luyepharma.eu](http://www.luyepharma.eu)