Collaboration-based New Drug R&D Strategy

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President of R&D and Head of International Business
Yabao Pharma Group (China)
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Yabao Pharma Group Snapshot

- A traditional mid-sized Chinese pharmaceutical company, established in 1978
- Publicly listed on Shanghai Stock Exchange (2002)
- Strong marketing & sales capabilities with excellent growth in revenue and profit
- A leader in GMP manufacturing
- Top-tier R&D capabilities in China, with excellent product development and international collaboration experience
- Current number of employees: ~5,000
Sales Turnover

Sales Turnover (RMB, Million)

- Expected to exceed RMB 2 billion in 2015, representing a five-year CAGR of over 15%

Net Profit
- RMB 170 million in 2014
- Estimated to increase 45%-55% in H1 2015
Marketing Coverage

Key Market

- Growth driver of sales, aggressive expansion in progress
- Focus on medical education and establishing brands and loyalty

Broad Market

- Currently accounting for majority of total sales
- Well managed nationwide distribution network
- Continue to maintain strong presence with both broad coverage and deep penetration
Manufacturing Overview

- **A leader in GMP manufacturing in China**
  - Over 30 years experience
  - 8 manufacturing plants, covering API, finished products and plastic container manufacturing capabilities
  - Oral, injectable and topical formulations for finished products

- **cGMP capabilities**
  - 2 finished product manufacturing plants approved by US FDA and EU, respectively
  - 6 API and 1 plastic container manufacturing lines established in accordance with EU-GMP and/or FDA-GMP
R&D Highlights

- Ranked in the top twenty within China’s pharmaceutical industry recently*

- Growing R&D organization with 2016 R&D budget of $32 million, ~10% of Yabao’s total revenues in 2015

- Pipeline of 10 products in phase I, II or III, including an innovative biologic drug candidate

- Strong in regulatory affairs: Over 300 drug approvals including generics, new formulations, and traditional Chinese medicines

*China National Pharmaceutical Industry Information Center, July, 2013, 2014 and 2015
Corporate Strategy

- Yabao was and is a domestic generics leader in China.

- Advancing the pharmaceutical capabilities through innovation and internationalization.
  - Pursue international collaboration on development of innovative drug candidates and approved drugs from the West
  - Pursue commercial collaboration with Western companies on their drugs approved in China
  - Expand Yabao’s commercial reach to the Western and other international markets through new generic product development

- Change is being driven by Yabao’s Chairman and top leadership. The necessary financial and human investments are occurring to ensure that Yabao achieves its innovation and growth goals.
New drug R&D (particularly discovery) capacity in China is much lower than in the West:

- To initiate new R&D programs: License-in from the West for co-development

Capacity building takes longer time for Chinese companies than in the West

- To progress R&D programs: Collaboration with partners and other leading academic scientists, and CROs

Thus, collaboration is the key currently when capacity is not adequately high, and to our capacity building
Establishing an Innovative Subsidiary

Vision and Mission: Developing break-through innovative medicines with global development potential through international collaboration

- A subsidiary of Yabao Pharm Group, focusing on innovative R&D
- China-based but globe-oriented
- Newly founded in April 2014, located in Suzhou bioBay, China
- ~30 employees; active expansion in progress
- Leadership team with rich R&D experience in BOTH US and China
SuZhou Yabao’s Business Model

Establishing Collaboration on Early-Stage Drug Candidates
- “Co-development” collaboration with world-class partners, large or small
- Yabao shares global rights, more or less

Conducting Early Development in China
- Achieve clinical PoC under global GxP standards
- Open and flexible to collaborate with CROs, academic researchers, governments, and investors

Late-stage Development and Commercialization
- Out-license global rights to overseas larger companies (or development resumed by larger partners)
- Continue to (co)-develop and (co)-commercialize in China (or out-license China rights to other Chinese pharmas)

Becoming a most innovative China-based, overseas-listed biotech
## Advantages of Our Co-development Model

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<th>Traditional License-in</th>
<th>Our Model</th>
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<tr>
<td><strong>Licensed</strong></td>
<td>China Right</td>
<td>China Right + A Share Of Global Right</td>
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<tr>
<td><strong>License Fees</strong></td>
<td>Large Upfront And Milestones</td>
<td>Minimal Upfront And Low Milestones</td>
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<td><strong>Early Development</strong></td>
<td>❖ By Licensee Alone&lt;br&gt;❖ Under China Standards</td>
<td>❖ Jointly With Partner&lt;br&gt;❖ Under Global Standards With Data Usable Globally And Shared Freely</td>
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<tr>
<td><strong>Full Development</strong></td>
<td>Same As Early Development</td>
<td>Partner Initiates Global Development And Pays Milestones</td>
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<td><strong>Launch</strong></td>
<td>Royalties Paid To Licensor</td>
<td>❖ We Have China Right And Pay Royalties To Partner&lt;br&gt;❖ Partner Pays Global Royalties To Us</td>
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Capacity Building: The Team

- Rich R&D success experience in both US and China

- Leaders in various scientific areas, and project managers
The Team (1/7)

Peng Wang, Ph.D., President of R&D and CSO

- **1990**, Ph.D. in Pharmaceutical Life Science from the University of Tokyo
- **1990 - 2008**, Schering-Plough Discovery Research, Research Fellow
  - Major contribution to discovery and early development of 9 development candidates
- **2008 - 2009**, WuXi AppTech, Corporate VP and Head of Discovery Biology
  - Business development: established collaboration on >30 projects with >10 Western companies
- **2009 - 2013**, Simcere Pharmaceutical Group, Corporate VP and CSO
  - International collaboration: 5 deals signed
  - Innovative R&D in China: 7 INDs approved, with the most advanced program in phase 3 and completing a phase 1 in Australia
- **2013 - current**, Yabao Pharmaceutical Group, Corporate VP, President of R&D and Head of International Business
  - International collaboration: 8 deals signed
  - Innovative R&D in China for the world, with 1 IND filed
Mr. Feng Wang, *Head of Clinical Development and Regulatory Affairs*

- Pharmacy (Shandong Medical University) and medical (Wannan Medical College) degrees
- 21 Years with the General Hospital of Chinese Air Force as Head of Clinical Pharmacology Department and Vice Chair of Clinical Trial Department (82-03)
- Head of R&D, Shanghai Lvgu Group (03-07)
- **Head of Clinical Development at Simcere Pharma Group (07-14)**
- Led all clinical development programs, including programs in collaboration with multinational major pharmas under global standards (“in China for Global”)

Dr. Lin Zhu, *Head of Pharmacology, Toxicology and ADME/PK*

- Ph.D. in Biotechnology from Tsinghua University
- **Head of Pharmacology and Toxicology at Simcere Pharma Group (08-13)**
- Led preclinical development and obtained IND approval of 7 innovative drug candidates
The Team (3/7)

Ms. Yonge Zhang, Head of Small Molecule Pharmaceutical Development

- BS in Pharmacy from China Pharmaceutical University
- Principal Investigator and head of Formulation Development, Jiangsu Hengrui/Hansoh (97-11)
- Head of Pharmaceutical and Analytical Development and Regulatory Affairs at Tianma Pharmaceuticals (11-13)
- Head of R&D at Xudong Haipu Pharmaceuticals (13-14)
- Led development and filing of 54 ANDAs

Dr. Yan Xia, Head of Medicinal Chemistry (Consultant)

- Ph.D. in Organic Chemistry from University of Pittsburgh, post-doctoral training at NIH
- Former Senior Principal Scientist with 21-year medicinal chemistry experience at Schering-Plough and Merck
- Major contribution to discovery and early development of 8 development candidates (including 1 launched)
- Published about 80 papers and patent applications
The Team (4/7)

Dr. Yuanyuan Xu, Head of Discovery Biology
- Ph.D. from Tsinghua University, Postdoctoral Fellow at Yale School of Medicine
- Associate Research Scientist and Project Leader at Yale Smillow Cancer Center (2010-2014)
- Published several original research articles in the leading journals, including Nature, Mol Cell, PNAS USA, J. Virol, etc.

Dr. Zhongping Fu, Director of Biologics Development
- Ph.D. from Macao Science and Technology University
- Responsible for analytical development and quality control for 3 therapeutic antibody programs (1 in phase I and other 2 filed as INDs), and responsible for purification for one of the programs
Mr. Lei Yang, Director of Project Management
- BS and MS from Zhongnan University
- 6 years experience in drug discovery and early development, former protein kinase team leader at Genscript and head of in vitro pharmacology and project manager (the BMS-Simcere collaboration program) at Simcere Pharma (2007-2011)

Dr. Xiarui Dou, Chief Patent Counsel
- Ph.D. in Pharmacology from Beijing Traditional Chinese Medicine University
- 6 years patent experience with large pharma and 2 years with law firm
- Certified lawyer and patent attorney

Ms. Weina Liu, Director of Business Development
- MS in Pharmaceutics from China Pharmaceutical University
- Former business development associate with Simcere Pharma
- Major contributions to 8 international collaboration deals
Ms. Karen LaRochelle, *BD and Transactions Consultant*

- 20 years of Business Development, including negotiation and contracting, with the international pharmaceutical company Bristol-Myers Squibb as Global Business Development Executive Director and Head of China BD
- Execution of over 40 collaborations including over 10 China-West announced partnerships
- MBA from Columbia University

Ms. Angela Haddock, *Contract Law Consultant*

- 15 years experience with international pharmaceutical company and law firms, including 7 years with Bristol-Myers Squibb as Senior Corporate Counsel on licensing, R&D, commercial and manufacturing deals
- Drafted and negotiated numerous biopharmaceutical collaborations, including over 10 China-West announced partnerships
- JD from Fordham University, licensed attorney in New York and New Jersey
The Team (7/7)

Scientific advisors for specific targets, indications, technologies, etc.

- **Diabetes Drug Development:**
  - ✓ Dr. Simeon Taylor, former head of CV and metabolic disease therapy area at BMS
  - ✓ Dr. John Amatruda, former SVP and Franchise Head of Diabetes & Obesity at Merck
International Collaboration Deals for Innovative R&D Programs

- **H1 2014**
  - UniSA: PLK/PI3K inhibitor, Oncology

- **H2 2014**
  - MRC: Kinase inhibitor for Parkinson’s disease
  - UBC: A peptide drug candidate, Stroke
  - UniSA: A recombinant protein drug candidate, Sepsis

- **H2 2015**
  - Lilly: Glucokinase activator, Diabetes
  - Lilly: SGLT1 inhibitors, Diabetes
  - Joint Drug Discovery Lab, Undisclosed oncology target
Yabao’s Commitment to Partners

- Increasing emphasis on R&D and innovation, with continuous improvement in R&D capacity building

- Collaboration as a major corporate strategy

- Highest standards of compliance, transparency and quality in China, as demonstrated by our international collaboration deals
Thank You for Your Attention!