2012中国（长沙）科技成果转化交易会

2012 China (Changsha) Science and Technology Achievements Transformation Fair

第四届药源生物制药国际研讨会

The 4th Yao Yuan Biotech-Pharma International Symposium

新药创制与生物医药产业发展

New Drugs Innovation and Biomedicine Industry Development

中国. 长沙

Changsha, China

2012年11月10-13日

November 10-13, 2012

长沙市政府　　中南大学　药源

ABOUT ORGANIZERS

Host

2012 China (Changsha) Science and Technology Achievement Transformation Fair (STATF)

Sponsored by Chinese Ministry of Science and Technology, Ministry of Education, Chinese Academy of Science, and Hunan Province, **STATF**, is one of the most influential annual technology commercialization fair in China.

Organizers

Changsha Municipal People's Government

Changsha, is the capital city of Hunan Province. Located in south-central China and on the lower reaches of Xiang river, a branch of the Yangtze River, Changsha is one of China's 20 most "economically advanced" cities.

Central South University

Located in Changsha, **Central South University** (CSU) is a comprehensive research university under the direct administration of the Ministry of Education, and is among the first tier universities in China. CSU is a member of the Project 211 and the Project 985 with strength in science engineering and medical science. According to the 2011 data in Chinese University Ranking, CSU ranks 16th out of 2000 universities in China. CSU was established in April 2000 on the basis of the amalgamation of the three former individual universities, namely Central South University of Technology (founded in 1952), Hunan Medical University (founded in 1914 as Hsiang-ya Medical College; currently named Xiangya School of Medicine) and Changsha Railway University (founded in 1953).

Yao Yuan

Yao Yuan—Academy for Pharma Innovation (www.yypharm.org) is a not-for-profit and IRS-approved tax-exempted organization with missions for increased U.S.-China trade and investment activities in the biotechnology and pharmaceutical industries by assisting American and Chinese companies, professionals and the general public to better understand the business environments and cultural traditions relevant to successfully doing business in both countries. Headquartered in Chicago, Yao Yuan currently has more than 50 expert advisors and more than two thousand members.

Supporting Organizers

Changsha National Hi-Tech Industrial Development Zone

Changsha National Bio-industry Park

Sponsors

Central South University, Cancer Research Institute

Central South University, Institute of Clinical Pharmacology

Central South University, College of Pharmacy

Central South University, School of Biological Science and Technology

The State Key Laboratory of Chemo/Biosensing and Chemometrics (Hunan University)

Changsha University

SPV Jiaxing International Biotech Park

Association of Chinese American Scientists and Engineers

CONTENTS

Opening Remark

Welcome to the 2012 China (Changsha) Scientific and Technological Achievements Translation Fair (STATF) and we hope you will enjoy the golden season of the beautiful and history- and culture-rich city of Changsha! This event will showcase the union of scientology and culture, scientology and capital, scientology and entrepreneurship, and will serve as a platform where international talents and domestic businesses can find commercial opportunities. As an important satellite conference of STATF, the 4th Yao Yuan Biotech/Pharma International Symposium with a theme of "Global Coalition, A Synergistic Path to Biopharma Innovation" takes place, thanks to the generous support of Changsha Municipal People's Government. We warmly welcome the executives and scientists from domestic and international biopharmaceutical industry, scholars from major universities and research institutes around the globe, and the officials from the state of Illinois, USA. We will celebrate today's vibrant biopharmaceutical industry, discuss the strategies to integrate the resources from government, industry, and academic institutions, and identify opportunities to improve the productivity of drug discovery and development. We will also attempt to promote the commercial applications of the state-of-the-art technologies in drug R&D, form strategic alliances that maximize the core competencies of all parties involved, and foster win-win partnerships. Herein we thank all the friends from faraway for attending this conference, Organizing Committee of the 2012 China (Changsha) Scientific and Technological Achievements Translation Fair (STATF), Changsha Municipal People's Government, and Central South University for their supports, and Changsha National Hi-Tech Industrial Development Zone, Changsha National Bio-industry Park, SPV Jiaxing International Biotech Park and Association of Chinese American Scientists and Engineers for sponsoring this event.

Hunan province has been long known for its talents, strategically important location and beautiful natural sceneries. Hunan's enormous advantages and potential have only been amplified lately by the national policies of the "Rise of Mid-China" and the "Environment-friendly and Resource-efficient Society" initiatives. We believe that you will make new friends from the biopharmaceutical field, expose to abundant scientific information, and find collaboration opportunities.

Let us enjoy the beautiful city of Changsha and work together to make the 4th Yao Yuan Biotech/Pharma International Symposium a memorable event.

Finally, we wish the 4th Yao Yuan Biotech/Pharma International Symposium a great success!

Prof. **Ya CAO**
Deputy Director, Cancer Research Institute
Central South University

Dr. **Gui-Dong Zhu**
President, Yao Yuan

Co-Chair of the 4th Yao Yuan Biotech-Pharma International Symposium

Congratulatory Speech
Changsha Municipal People's Government

Respected Prof. Cao Ya, Chairman of Hunan Federation of Returned Overseas Chinese, Prof. Zhou Kechao, Vice President of the Central South University, Dr. Zhu Gui-Dong, President of Yao Yuan-Academy for Pharma Innovation, distinguished guests and friends,

At this golden season in Changsha and on the occasion of the 2012 China (Changsha) Science and Technology Transformation Fair, we are now embracing the opening ceremony of the Fourth Yao Yuan International Symposium. On behalf of the CPC Changsha Municipal Committee and the Changsha People's Government, allow me to extend my warmest congratulations on the convening of this symposium, and my warmest welcome to all the guests present!

Hunan is an important province in central China. Changsha, as its capital city, has a population of nearly seven million. In recent years, under the leadership of the CPC Changsha Municipal Committee and the Changsha People's Government, and with the support from all circles of the society, Changsha has witnessed dramatic development in its economy, its comprehensive strength ranking among top seven in the country. With the implementation of strategies such as "Rise of Central China" and "Integration of Changsha, Zhuzhou and Xiangtan", Changsha has attracted wide attention in its bio-pharma industrial integration. The Bio-pharma industry has become a paramount new industry of the city. Changsha New High-Tech Industrial Development Zone and Changsha Bio & Information Industry Park, for example, have attracted many bio-pharma enterprises. Among the overseas talents attracted to Changsha in accordance with its plan, several outstanding innovative teams are from the bio-pharma industry. According to the state plans for the bio-industry development, the couple of years to come will be a critical period for the bio-pharma industry. Changsha will take this opportunity, accelerate its bio-pharma industry, a strategic new industry, and promote the core competitive strength of the city.

Scientific and technological progresses are closely connected with people's life. To accelerate the transformation of science and technology achievements is one of the functions of the government. The transformation fair has been held successfully for five years, building a new platform for the transformation of science and technology achievements. At this fair, Yao Yuan from the United States will sign a framework agreement on strategic collaboration with Changsha New High-Tech Industrial Development Zone and Changsha Bio & Information Industry Park. By focusing on medicine innovation and bio-pharma development—combining the strength of the government, enterprises, universities and research institutes, we hope that this fair can promote the China-U.S. interactions and collaborations in the bio-pharma industry, strengthen the transformation and match-making in bio-pharma information, technology and achievements both domestically and internationally , and promote the bio-pharma industry in China.

In conclusion, Ladies and gentlemen, I'd like to wish the Fourth Yao Yuan International Symposium a complete success, and good health and happiness to all the leaders and guests!

Thank you!

Mr. Xia Jianping
Deputy Mayor of Changsha

Congratulatory Speech
Central South University

Honorable leaders, distinguished guests and fellow delegates:

Hosted by the organizing committee of Changsha Scientific and Technological Achievements Translation Fair and organized by Central South University (CSU) and Yao Yuan, the 4th Yao Yuan Biotech/Pharma International Symposium will kick off in the beautiful city of Changsha on 11-11-2012. On behalf of the CSU, please allow me to extend my warm welcome to all the experts and scholars from academia and bio-pharmaceutical industry. I would like also to express my deep appreciation to all the organizations and departments that have worked diligently to make this event possible.

CSU is a comprehensive, research-based, and national key university under the direct administration of the Ministry of Education of China. The University is among the first group of schools that were selected by both Project 211, a project of building national key universities and colleges for the 21st century, and Project 985, a joint constructive project of building world-class universities co-sponsored by the Chinese central government and local governments. In recent years, all of the undertakings of the university have progressed rapidly. CSU always ranks the top among all of the universities in China in key metrics such as the number of academicians of the Chinese Academy of Sciences and Chinese Academy of Engineering, state key laboratories, etc. A popular saying in China goes like 'Xiangya is the best hospital in south China while Peking Union ranks number 1 in north China". CSU boasts three Grade-A affiliated hospitals, including Xiangya. Inspired by the century-old tradition of rigor in medicine, CSU established the College of Pharmacy on the foundation of Xiangya School of Pharmacy, which established 5 sub-disciplines including pharmaceutical chemistry, natural pharmacology, cardiovascular pharmacology, pharmacogenetics and pharmaceutics. Covering each and every stage from drug development to clinical applications, these 5 sub-disciplines complement each other and have formed distinguished advantages. Based on an assessment of academic center of Ministry of Education in 2009, the pharmacy school of CSU ranked the 7th among all of the universities. CSU also lays great emphasis on the layout of "Combining Production and Research" and it hopes that this meeting can promote CSU to make further progress in the field of pharmaceutical innovation.

Drug research and development constantly calls for new way of thinking. We have to make full use of global technological information and intellectual resources. Effective collaboration is the key to success. Yao Yuan has established strong collaborative relationships with many universities, technological centers and a large group of experienced scientists in pharmaceutical industry. I believe this meeting will serve as a platform for us to exchange ideas and learn from each other. We will arrange multi-tiers communication , so that international colleagues can better understand the progress of new drug research and development of both in China and in Hunan province. This meeting will provide opportunities for business friends who support the undertaking of drug research and development to conduct a productive collaboration with Yao Yuan. At the same time, this meeting will also serve as a public platform for government to facilitate the commercialization and trade of scientific and technological achievements, promoting resource integration and further advancing hi-tech industrialization. It will provide information, technologies, talents, products as well as business opportunities for pharmaceutical enterprises, motivate the researchers of universities to develop new drugs and finally combine the efforts of government, enterprises, universities and scientific research institutions in real sense.

Changsha is a famous city with time honored cultural history. It boasts beautiful sceneries and bountiful talents. We gather here in this golden autumn to share stories of new drug development, discuss future development and experience distinguished customs of Hunan.

I wish this symposium a great success.
Wish you good health and every success in your business!

Thank you!

Professor Kechao ZHOU
Vice President of Central South University

The 4th Yao Yuan Biotech-Pharma International Symposium

Global Coalition
A Synergistic Path to Biopharma Innovation

Changsha, China
November 10-16, 2012

Agenda

November 10, 2012

8:00 AM—9:00 PM Registration (Empark Grand Hotels & Resort Changsha, lobby)
6:00 PM—8:30 PM Dinner

November 11, 2012

Session 1: Pharmaceutical R&D: Current Challenges and Future Perspectives
Place: Empark Grand Hotels & Resort Changsha (the auditorium on the third flooor)
Moderator: Professor **Ya Cao**, Deputy Director, Cancer Research Institute, Central South University

9:00 AM— 10:00 PM	Opening Ceremony, the 4th Yao Yuan Biotech-Pharma International Symposium Opening Remark, Greetings, Signing Ceremony of Collaborations, Group Photo
10:00 AM—10:20 AM	Break

Moderator: Professor **Yuquan Wei**, Academician of Chinese Academia of Science, Vice President of Sichan University (35 min presentation including Q&A)

10:20 AM—10:55 AM	The Application and Prospective of Individualized Medicine Prof. **Honghao Zhou**, Academician of Chinese Academia of Engineer; Director, In stitute of Clinical Medicine, Central South University
10:55 AM—11:30 PM	Understanding Antibody and Fc Receptor Function in the search for new bio mark-ers For the Development of New Therapeutics In Inflammation and Cancer **P. Mark Hogarth**, MD, Distinguished Professor & Director, Burnet Institute, Australia; Senior Principal Research Fellow of the NHMRC
11:30 AM—12:05 PM	Artificial Genetic Switch Based on Pyrrole-Imidazole Polyamide Conjugate **Hiroshi Sugiyama**, Distinguished Professor, Kyoto University, Japan
12:05 PM—12:15 PM	Presentation of Award Certificate
12:15 PM—2:00 PM	Lunch

Session 2A: Exhibitions, Matchmaking, and Job Fairs
Place: Empark Grand Hotels & Resort Changsha (2:00 PM– 6:00 PM, Hefei Hall on 3rd Fl)
*Exhibitions, Job Fairs, Matchmaking Opportunities will continue for remainder of the conference

Session 2B: Translational Science and Case Studies
Place: Empark Grand Hotels & Resort Changsha (the auditorium on the third flooor)
Moderator: **Brian S. J. Blagg**, Ph.D., Professor, The University of Kansas; Senior Editor, JMC

2:00 PM – 2:35 PM	Targeting Nongenomic Action of Nuclear Receptors for Drug Development **Xiao-kun Zhang**, Ph.D, Professor and Dean, School of Pharmaceutical Sciences, Xiamen University, China
2:35 PM – 3:10 PM	Therapeutic targets of the tumor microenvironment: opportunities and challenges Dr. **Giovanni Melillo**, Medical Director, Oncology at Bristol-Myers Squibb; For mer Head of Tumor Hypoxia Laboratory, National Cancer Institute
3:10 PM—3:20 PM	Presentation of Award Certificate
3:20 PM—3:40 PM	Tea Break

Moderator: Dr. **Paul Mar**, Chairman of Board & CEO, SynChem, Inc.

3:40 PM—4:15 PM	Empowered Antibodies for Cancer Therapy: From Early Stage Research to a Clinically Approved Drug Dr. **Peter Senter**, Vice President, Seattle Genetics, Inc.
4:15 PM—4:50 PM	Oxaboroles as antiparasitic agents Dr. **Thomas von Geldern**, Individual Consultant, Former Research Fellow at Abbott Laboratories
4:50 PM—5:00 PM	Presentation of Award Certificate
6:30 PM—8:30 PM	Dinner

November 12, 2012

Session 3: The Cutting Edge of Pharma Innovation
Place: Empark Grand Hotels & Resort Changsha (the auditorium on the third flooor)
Moderator: Prof. Weihong Tan, Dean of College of Biology, Chemistry and Chemical Engineering, Hunan University (35 min presentation including Q&A)

8:30 AM – 9:05 PM	New Drug Development in the U.S. Using Methylnaltrexone as an Example **Chun-Su Yuan**, M.D., Ph.D., Cyrus Tang Professor & Director, Tang Center for Herbal Medicine Research, the University of Chicago; Methylnaltrexone inventor
9:05 AM—9:40 AM	Preventing and Fighting Infectious Disease: Carbohydrate Vaccines **Peter H. Seeberger, Ph.D**, Director at Max Planck Institute of Colloids and Inter faces, ex-President of the Swiss Academy of Natural Sciences
9:40 AM—9:50 AM	Presentation of Award Certificate
9:50 AM—10:10 AM	Break

Moderator: Dr. **Lizhong Dai**, Chairman & CEO, Sansure Biotech Inc. (35 min presentation including Q&A)

10:10 AM—10:45 AM	China takes on pharma innovation Dr. **Hua-Liang Jiang**, Professor & Deputy Director, Shanghai Institute of Meteria Medica, Chinese Academia of Chinese; Dean, College of Pharmacy, East China University of Science & Technology
10:45 AM—11:20 AM	Bioactive Secondary Metabolites from Nature and New Drug Discovery **Jikai Liu**, Ph.D, Professor & Deputy Director, Kuming Institute of Botany, Chinese Academy of Science
11:20 AM—11:55 AM	Isoform-selective Hsp90 C Inhibitors and Therapeutic Application **Brian S. J. Blagg**, Ph.D., Professor of Medicinal Chemistry, The University of Kansas; Senior Editor, The Journal of Medicinal Chemistry
11:55 AM—12:05 PM	Presentation of Award Certificate
12:05 PM—2:00 PM	Lunch

Session 4: **Panel Forum**: Coalition between Industry and Academic Institutions, A Synergistic Path to Biopharma Innovation
Place: Empark Grand Hotels & Resort Changsha (the auditorium on the third flooor)

2:00 PM—2:30 PM	Leading Seminar: Transformational Medicine and Collaborations between Industry and Academia **Chun-Su Yuan**, M.D., Ph.D., Cyrus Tang Professor & Director, Tang Center for Herbal Medicine Research, the University of Chicago; Methylnaltrexone inventor
2:30 PM—3:00 PM	Panel Discussion: Synergy for Pharma Innovation between Industry and Academic Institutions Moderator: Dr. **Tony Giordano**, CEO, TheraVasc Inc.
3:00 PM—3:20 PM	Break
3:20 PM—3:50 PM	Leading Seminar: TBD SFDA Official
3:50 PM—4:20 PM	Accelerated IND Registration in China: Strategies and Challenges Panel Moderator: Dr. **Sunny Liu**, General Manager, Beijing Canny Consulting
4:20 PM—4:30 PM	Presentation of Award Certificate
4:30 PM—5:00 PM	Leading Seminar: Continuous Flow Chemistry **Peter H. Seeberger, Ph.D,** Director at Max Planck Institute of Colloids and Inter faces, ex-President of the Swiss Academy of Natural Sciences
5:00 PM—5:30 PM	Panel Discussion: Efficient Pharmaceutical Manufacturing Moderator: Dr. **Thomas von Geldern**, Individual Consultant, Former Research Fellow at Abbott Laboratories
6:30 PM—8:30 PM	Dinner

November 13, 2012

Session 5: New Fields, Established Market and Improved IP Protection
Place: Empark Grand Hotels & Resort Changsha (the auditorium on the third flooor)
Moderator: Lun-Quan Sun, Ph.D, Professor and Head of Center for Molecular Medicine, Xiangya Hospital, Central South University

8:30 AM – 9:05 PM	Maximize Patent Value for Innovative Pharmaceutical and Biotech Companies **Ningling Wang**, Partner at Finnegan, Henderson, Farabow, Garrett & Dunner, LLP
9:05 AM—9:40 AM	Performing Pharmacokinetic Studies in the Juvenile and Adult Domesticated Swine: Does the PK Resemble Human Parameters? Prof. **Gregory T. Knipp**, Director, Indiana Center for Translational Sciences Insti tute, and College of Pharmacy, Purdue University
9:40 AM—10:15 AM	Repurposed Medicine Dr. **Tony Giordano**, CEO, TheraVasc Pharmaceutical Inc.
10:15 PM—10:25 PM	Presentation of Award Certificate
10:25 AM—10:45 AM	Tea Break

Moderator: Prof. **Gregory T. Knipp**, College of Pharmacy, Purdue University

10:45 AM—11:20 AM	Therapeutic Use of Nucleic Acid-based Agents **Lun-Quan Sun**, Ph.D, Professor and Head of Center for Molecular Medicine, Xiangya Hospital, Central South University
11:20 AM—11:55 PM	The foundation of molecular medicine: Molecular tools **Weihong Tan**, Ph.D, Professor and Dean, College of Biology, Chemistry & Chemi cal Engineering, Hunan University, P. R. China
11:55 AM—12:05 PM	Presentation of Award Certificate
12:05 PM—12:35 PM	Closing Remark Prof. **Ya Cao**, Deputy Director, Cancer Research Institute, Central South University
12:35 PM—2:00 PM	Lunch

BIOGRAPHICAL SKETCH (in alphabetic order)

Brian S. J. BLAGG

Professor Blagg was raised in California and attended Sonoma State University, where he received Bachelor degrees in both Chemistry and Environmental Studies in 1994. After which, he joined Dale Poulter's group at the University of Utah as a graduate student and focused his doctoral dissertation on the elucidation of the tertiary cyclopropylcarbinyl cation generated in the squalene synthase-catalyzed rearrangement of presqualene diphosphate to squalene. In 1999, he joined the laboratory of Dale Boger at The Scripps Research Institute as a NIH Postdoctoral Fellow and pursued the total synthesis of camptothecin and developed the tandem intramolecular Diels–Alder/1,3-dipolar addition reaction, which was eventually used to construct vinblastine and other natural products. In 2002, Brian joined the Department of Medicinal Chemistry at The University of Kansas as an Assistant Professor of Medicinal Chemistry and began his independent career by the pursuit of small molecule modulators of the Hsp90 protein folding machinery. In 2007, he was promoted with tenure to Associate Professor and in 2010 to Professor. Some of the significant contributions made by his group iniclude the identification of chimeric molecules of radicicol and geldanamycin, which led to the discovery that the hydroquinone species are more efficacious inhibitors of Hsp90 than the corresponding quinone analogues. In addition, he has used this chimeric class of compounds to design the first isoform-selective Hsp90 inhibitor. Furthermore, he has pursued the development of Hsp90 C-terminal inhibitors that are able to segregate induction of the pro-survival heat shock response from inhibition of chaperone-mediated protein folding, which has led to the generation of two entirely new class of Hsp90 modulators that are being pursued for the potential treatment of neurodegenerative diseases and cancer, respectively. These contributions have led to several awards for the Blagg Research Group, including the 2009 American Chemical Society's David W. Robertson Award in Medicinal Chemistry. In addition, Professor Blagg serves on several Editorial Advisory Boards for Medicinal Chemistry Journals and is currently a Senior Editor for the Journal of Medicinal Chemistry.

Tony Giordano

Tony Giordano is the President and CEO of TheraVasc. Dr. Giordano has a long history of serving in senior management positions with biotechnology companies, having served as Vice-President or President of 5 previous companies. He has raised both venture and non-dilutive funding, initiated partnering deals with pharmaceutical companies, and has been involved in four programs that were or are in clinical development. In addition, Dr. Giordano served as the Assistant Dean of Research and Business Development at LSU Health Sciences Center in Shreveport, where he negotiated 18 licenses during his five years in this capacity. While in Louisiana, Dr. Giordano was appointed by the Governor to the Innovation Council where he served for 2 years. After receiving his Ph.D. from Ohio State, Dr. Giordano did training at NIH then began his career in industry as a Senior Scientist at Abbott Labs. He also serves as an advisor to three venture firms and is an Adjunct Assistant Professor at Case Western Reserve University where he teaches a course on bio-entrepreneurship.

P. Mark HOGARTH

Professor Mark Hogarth is a Senior Principal Research Fellow of the NHMRC and is responsible for Research Strategy at the Burnet Institute having previously been Director of the Austin Research Institute. He holds Professorships at University of Melbourne and Monash Uni-

Professor Hogarth heads the Inflammation Cancer and Infection Laboratory which has extensively investigated the biochemistry of major genes and proteins involved in immunity. He has published over 150 papers on the discovery and study of cell surface molecules including mouse Ly antigens and human CD antigens in health and disease. Of particular interest have been the immunoglobulin Fc receptors in immune complex inflammation and use in the treatment of autoimmune disease, allergy and cancer. The Fc receptors are also of great practical importance

BIOGRAPHICAL SKETCH

as their proinflammatory activity can be harnessed by, and is critical to, the success of many therapeutic anti-cancer monoclonal antibodies.

Professor Hogarth's pioneering work on molecular genetics, the structure and the biological function of these receptors revealed for the first time how FcR and antibodies interact in health and disease and how this interaction can be manipulated for the development of new therapies. His research has led to the development of potential biological and chemical therapeutics for the treatment of autoimmune diseases, such as rheumatoid arthritis. It also underpins our understanding of how therapeutic antibodies induce responses against cancer cells.

Professor Hogarth has advised biotech and pharma companies on the development of their products and has had significant experience in research translation. He has held a number of public and private company board positions overseeing commercialisation of biomedical research, especially in cancer, inflammation and infectious disease.

Bob HUMPHRIES

Bob Humphries qualified with a BSc (Hons) in Pharmacology from the University of Bradford in 1979 and started a 32 year career in the Pharmaceutical industry with Fisons, Astra then AstraZeneca as a pharmacologist, scientific team leader and cross functional project team leader. At the heart of Bob's career was the privilege of leading the discovery project teams responsible for the discovery and early progression of the anti-thrombotic ($P2Y_{12}$ antagonists) compounds BRILINTA and cangrelor - medicines that have, and will, save patients' lives. Bob was recipient of a 2010 CEO's award for leading the BRILINTA Discovery Project and also featured in R&D Directions Most Notable People in R&D in 2009 for the BRILINTA story.

From 2006, Bob led the cross functional project team responsible for the early development programmes for the AZ bronchodilator and GR agonist projects. From March 2011, Bob was based in Mölndal, Sweden as VP Inhaled Projects in the AZ Respiratory & Inflammation iMed. In this role, in addition to maintaining project delivery, he was also responsible for overall strategic aspects of Inhaled Projects, including revision of the Disease Target Product Profiles for COPD.

Since leaving AstraZeneca in April 2012, Bob has started the consultancy "VisionRealisation Ltd" with the ambition of applying the mantra of "Vision - Belief- Momentum" to help other project teams translate ideas into credible, achievable plans and realise potential opportunities to change patients' lives.

Hualiang JIANG

Dr. Hualiang Jiang was born in Wujin County, Jiangsu Province in January 10 of 1965. He obtained his bachelor's degree from the Department of Chemistry, Nanjing University in 1987. In September 1989, he entered East-China Normal University, and received his Master degree in physical chemistry (quantum chemistry) in 1992. From September 1992 to July 1995, he studied in Shanghai Institute of Materia Medica (SIMM), Chinese Academy of Sciences for his Ph.D. degree, and in 1995 he received the Ph.D. degree in organic chemistry. He is currently a professor of SIMM. He also assumes the deputy director of the institute and the director of the Drug Discovery and Design Center. He is the chief-scientist of one 973 project and acts as memberships for the scientific committee of several major research programs in China, such as 863 Program in Biology and Medical Technology, National Basic Research Program in Protein Science, and Major Research Project of the National Natural Science Foundation. He also serves on the Editorial Advisory Boards for several journals like Journal of Medicinal Chemistry (Senior Editor) and ChemMedChem. He has been rewarded by Natural Sciences Award of China, 5th Prize of Yong Scientist Awards of China, Natural Sciences Award of Shanghai, and Top-10 Outstanding Scientist of Shanghai (2001-2003).

Gregory T. KNIPP

Greg graduated with a B.S. in Biochemistry from Cook College, Rutgers University in 1988. He then worked as a Research Associate from 1986-1991 in the Physical Pharmacy Department of Bristol-Myers Squibb. He earned his M.S. and Ph.D. degrees in Pharmaceutical Chemistry from 1991-1997 under the supervision of Dr. Ronald Borchardt at The University of Kansas. He then performed his postdoctoral studies from 1997-1999 in the Department of Molecular and Integrative Physiology, The University of Kansas Medical Center in the laboratory of Dr. Michael J. Soares. He joined the Department of Pharmaceutics as an Assistant Professor in the Ernest Mario School of Pharmacy at Rutgers University in 1999, where he stayed until

BIOGRAPHICAL SKETCH (in alphabetic order)

December of 2005. He moved his laboratory to the Department of Industrial and Physical Pharmacy at Purdue University in January 2006, where he is currently an Associate Professor. He also currently serves as the Associate Director of the Dane O. Kildsig Center for Pharmaceutical Processing Research and as the Chairman of the Purdue Translational Pharmacology CTSI Core Facility. His current research interests include the molecular and functional characterization of human intestinal oligopeptide transporters, the effect of xenobiotics on placental fatty acid homeostasis and fetal development, and the effects of dosage form variation on clinically-relevant performance in the porcine model. He has co-authored over 55 scientific publications and has been internationally recognized for his research in the field.

Ji-Kai LIU

Prof. Dr. Ji-Kai LIU, vice president of Kunming Institute of Botany, CAS, and director of State Key Laboratory of Phytochemistry and Plant Resources in West China, acquired his Ph. D. at Lanzhou University (organic chemistry) in 1988. After that he worked at the Department of Chemistry, Zhongshan University in Guangzhou. During 1993-1994 he worked as a research fellow of Alexander von Humboldt at the Institute of Pharmacognosy and Analytical Phytochemistry at the University of the Saarland in Germany. He has been professor of natural products chemistry at Zhongshan University since 1995. Between 1996-1997 he worked as a chemical researcher at the Pharma Research Center of Bayer AG in Wuppertal/Germany. Since 1997 he has been professor of natural products chemistry at the Kunming Institute of Botany, the Chinese Academy of Sciences. He has published over 200 scientific papers in international peer-reviewed journals including *Chem. Rev.*, *Angew. Chem. Int. Ed.*, *Nat. Prod. Rep.* and *Org. Lett.*. He is the author of the book *Mycochemistry* and also one of inventers for more than 10 patents. Dr. Liu has received an array of honors and awards such as Hundred Talent Program of CAS (1995), Bayer-CAS Award (2002), National Natural Science Prize (2003, 2nd Class, the Central People's Government of China), Chief scientist of 973 program (2009, 2009CB52300). He is Editor-in-Chief of *Natural Products and Bioprospecting*, the member of Editorial Board for 6 international journals such as *J. Chem. Ecol.*, *Myco. Prog.*. *J. Asian Nat. Prod. Res.*. His field of work focuses on natural bioactive compounds from higher fungi including chemical biology, total synthesis and biosynthesis of NP.

Giovanni MELILLO

Dr. Giovanni Melillo obtained a medical doctor degree in 1981 and a specialty in Medical Oncology in 1984 from the University of Naples, Italy. He joined the Laboratory of Experimental Immunology of the National Cancer Institute in Frederick in 1991 as visiting scientist. In 1999 Dr. Melillo became Senior Investigator with the Developmental Therapeutics Program of the National Cancer Institute at Frederick where he contributed to the implementation of a drug discovery and development program targeting the transcription factor Hypoxia Inducible Factor 1. During his tenure at the National Cancer Institute Dr. Melillo was involved in the development of novel therapeutic strategies targeting hypoxic cell signaling and in the design and implementation of phase I clinical trials of molecularly targeted agents in cancer patients. Since 2011, Dr. Melillo is Medical Director, Discovery Medicine Oncology at Bristol-Myers Squibb, where he is contributing to the development of novel drugs for cancer therapy. Dr. Melillo serves as Associate Editor of *Journal of Molecular Medicine* and *Cancer Research* and is on the Editorial Board of *Molecular Cancer Therapeutics*, *Cell Cycle*, *Molecular Cancer and Cell Death and Disease.*

Peter H. SEEBERGER

Peter H. Seeberger studied chemistry and biochemistry in Erlangen (Germany) and Boulder (USA). After completing his PhD and performing research at the Sloan-Kettering Cancer Center Research in New York he built an independent research program at MIT where he was promoted to Firmenich Associate Professor of Chemistry with tenure after just four years. After six years as Professor at the Swiss Federal Institute of Technology (ETH) Zurich he assumed positions as Director at the Max-Planck Institute for Colloids and Surfaces in Potsdam and Professor at the Free University of Berlin. In addition he serves as Affiliate Professor at the Sanford-Burnham Institute for Medical Research (La Jolla, USA) and honorary Professor at the University of Potsdam.

BIOGRAPHICAL SKETCH

Professor Seeberger's research on the chemistry and biology of carbohydrates, continuous flow chemistry and automation of chemistry, carbohydrate vaccine development and abroad range of topics from engineering to immunology has been documented in over 300 peer-reviewed journal articles, two books, more than twenty patents, over 150 published abstracts and more than 590 invited lectures. This work was recognized with more than 25 international awards from the US (*e.g.* Arthur C. Cope Young Scholar Award, Horace B. Isbell Award, Claude S. Hudson Award from the American Chemical Society), Germany (*e.g.* Körber Prize for European Sciences), Holland (Havinga Medal), Israel (Honorary Lifetime Member Israel Chemical Society), Japan (Yoshimasa Hirata Gold Medal) and Switzerland ("The 100 Most Important Swiss").

Peter H. Seeberger served the scientific community in many functions. He is the Editor-in-Chief of the *Beilstein Journal of Organic Chemistry*, was the Editor of the *Journal of Carbohydrate Chemistry* and serves on the editorial advisory boards of many other journals.

Through his work in the area of neglected diseases, Peter Seeberger has become involved in philanthropic causes. He is a co-founder of the *Tesfa-Ilg "Hope for Africa" Foundation* that aims at improving health care in Ethiopia that recently helped to build a bed-net factory.

The research in the Seeberger laboratory has given rise to several spin-off companies in the USA and Germany.

Peter SENTER

Peter Senter joined Seattle Genetics in August 1998 and has served as Vice President, Chemistry since September 2002. In February 2009, Dr. Senter was recognized as the company's first Distinguished Fellow. He leads Seattle Genetics' chemistry department, which carries out research in antibody-drug conjugate technologies, including the development of potent drug payloads, novel linker systems, conjugation methodology and mechanism of action studies. Prior to joining the company, Dr. Senter was with Cytokine Networks, Inc., the Bristol-Myers Squibb Pharmaceutical Research Institute and the Dana-Farber Cancer Institute, Harvard Medical School. Dr. Senter received a Ph.D. in Chemistry from the University of Illinois, and an A.B. in Biochemistry from the University of California, Berkeley. He is the Senior Editor of Bioconjugate Chemistry and Affiliate Professor of Bioengineering at the University of Washington. His research interests include targeted drug delivery, protein chemistry and biochemistry, and anticancer drug design. Dr. Senter has authored more than 125 scientific publications and holds more than 40 patents.

Hiroshi SUGIYAMA

Dr. Hiroshi Sugiyama is a professor at the Department of Chemistry and a principal investigator at the Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University. He obtained his BS in 1979 and Ph.D in 1984 at Kyoto University and did his postdoctoral training (1984-1986) at the University of Virginia. Dr. Sugiyama subsequently became an assistant professor and was promoted to associate professor in 1993 at Kyoto University. He joined Tokyo Medical and Dental University as a full professor in 1996 and returned to his alma mater Kyoto University in 2003 to assume his current position. Dr. Sugiyama has been received multiple prestigious awards, including the IBM Japan Science Award and the Chemical Society of Japan Award for Creative Work. He is on the editorial advisory board of *J. Am. Chem. Soc., J. Med. Chem., ChemBioChem and J. Nucleic Acids*, on the editorial board of *The Chemical Record* and is the associate editor of *Biomaterial Science*. Dr. Sugiyama's research interest lies in the interface of chemistry and biology. Using the tools of chemistry and molecular biology, the Sugiyama group is defining the chemical principles underlying the recognition, reactivity and structure of nucleic acids. His group is the only group in the world working on such a general and fundamental aspect of nucleic acids. The long-term goal of his group is creation of artificial genetic switches for targeted cell differentiation and treatment of human diseases.

Lun-Quan SUN

Professor Lun-Quan Sun is currently a Distinguished Professor and Director at Center for Molecular Medicine, XiangYa Hospital, Central South University, China (since 2010). He also conjointly holds a Professor position at University of Technology Sydney, Australia. He was awarded his PhD in 1988 from the

BIOGRAPHICAL SKETCH (in alphabetic order)

Fourth Military Medical University/Australian National University. Since then, he further pursued his research career at University of New South Wales (Lecturer, Senior Lecture, and Associate Professor), and Johnson and Johnson Research Institute (Senior Scientist, Principal Scientist, and Chief Scientist).

His research areas are mainly focused on the understanding of molecular bases for carcinogenesis and novel strategies of nucleic acid-based therapies for cancer and viral diseases. In his over 25 years' research experience overseas and recently in China, he has well balanced the basic sciences and clinical needs and been an active promoter of translational medicine. One of his key contributions to biomedical sciences is the discovery of unique catalytic properties of DNA molecules in early 2000s; and then further systematically developed DNAzyme technology platforms for their uses in cancer research. He published extensively in both high impact journals and specialized journals including *Nature Biotech*, *Nature Med*, *PNAS* and *JBC* etc, served in various professional panels and committees both in China and internationally.

Dr. Senter has authored more than 125 scientific publications and holds more than 40 patents.

Weihong TAN

Dr. Weihong Tan received a Ph.D. in Physical Chemistry from the University of Michigan, Ann Arbor in 1993. He was then named a Distinguished Postdoctoral Researcher by the US-DOE and worked at Ames Laboratory. In 1996, he joined the University of Florida as an Assistant Professor of Chemistry, and was promoted to Associate Professor (2001), Full Professor (2003) and Distinguished Professor (2012) ranks. He was named a University of Florida Research Foundation Professor (2004), and V. T and Louis Jackson Endowed Professor (2008). Dr. Tan is also a Professor in Hunan University in Chemistry and Biomedical Engineering. He is the Director of State Key Laboratory of Chemo/Bio-Sensing and Chemometrics. Tan's group has developed research programs in bioanalysis, chemical biology, bionanotechnology, and biomedical engineering. Currently, the Tan group is working on synthesizing a variety of DNA probes for biomedical studies and for DNA nanomotors, in developing new nanomaterials and bionanotechnology for bioanalysis, molecular imaging and drug delivery, and in elucidating molecular foundation of diseases such as cancer using a chemical biology approach. His work has been recognized by many awards, including the Pittcon Achievement Award in 2004 and the ACS Florida Award in 2012 for outstanding contributions to chemical sciences. Dr. Tan has published extensively in the field of bioanalysis, chemical biology and bionanotechnology with more than 330 papers, with an H-index of 68 and more than 16,000 citations.

Tom von GELDERN

Dr. Tom von Geldern has been an independent consultant to the pharmaceutical and biotech industries since 2007, specializing in medicinal chemistry and discovery strategy and tactics. Prior to this, Dr. von Geldern spent over 20 years in the pharmaceutical industry, most recently serving as a Research Fellow and Senior Group Leader at Abbott Laboratories. In this capacity he led medicinal chemistry efforts resulting in the identification of clinical candidates in the areas of oncology, inflammation, cardiovascular and metabolic diseases. He is an author of over 80 peer-reviewed articles, an inventor on 48 US patent applications, and has lectured by invitation on more than 50 occasions.

Dr. von Geldern received S.B. degrees in Chemistry, Mathematics, and Biology from MIT, a Ph.D. in Chemistry from the University of California at Berkeley, and performed postdoctoral research at Stanford University.

Ningling WANG

Ningling Wang's practice involves patent prosecution, opinions, due diligence, client counseling, licensing, and patent litigation in the areas of chemicals, chemical engineering, pharmaceuticals, medical devices, semiconductor materials, and nanotechnology. She has extensive experience working with multinational and Chinese companies, providing legal advice on IP portfolio management and due diligence. Ms. Wang has been involved in various cases before the U.S. International Trade Commission (ITC) and U.S. district courts.

BIOGRAPHICAL SKETCH

Ms. Wang speaks frequently in conferences and seminars in China and internationally on patent-related topics. She taught a graduate course on U.S. IP law at Renmin University of China Law School and a graduate course on U.S. IP law, with patent mock trial, at Shanghai Jiao Tong University KoGuan Law School. She also serves as a program professor of Law at China Science and Technology University. Ms. Wang is a vice-chair of Licensing Executives Society International, Asia Pacific Committee, co-chair of American Chamber of Commerce, Shanghai (IP Committee), Board of Directors of Licensing Executives Society, China.

Highlights

• Conducted due diligence for multinational and Chinese companies.
• Represented multinational and Chinese companies in IP portfolio management.
• Represented a large U.S. pharmaceutical company in an Abbreviated New Drug Application (ANDA) litigation.
• Law clerk to the Honorable Ann Aiken of the U.S. District Court for the District of Oregon, 2000.
• Managing editor of the *Oregon Law Review*, 2000-2001.
• Worked at Liu, Shen & Associates in Beijing, China, 1994-1995; and Genentech, 1998.

Professional Recognition

♦ Order of the Coif

Chun-Su YUAN

Dr. Yuan is the Cyrus Tang Professor in the Pritzker School of Medicine, and Director of the Tang Center for Herbal Medicine Research, University of Chicago.

Dr. Yuan came to the U.S. from China in 1980 to enter a Ph.D. program at the University of Arizona. In 1983, he passed the U.S. medical board exams for foreign physicians, and started his medical practice in the U.S.

Since 1994, Dr. Yuan has been at the University of Chicago conducting clinical trials for new drug development. Dr. Yuan's group performed key preclinical and early clinical studies in developing a novel compound, methylnaltrexone (MTNX), for opioid bowel dysfunction. In 2005, Progenics and Wyeth Pharmaceuticals entered a $365 million MTNX joint development agreement for opioid-induced side effects, based on the fact that the University of Chicago licensed MTNX to Progenics in 2001. In 2008, the U.S. FDA approved methylnaltrexone (Relistor®). By 2011, this drug was approved for use in over 50 countries worldwide, marketed by Salix Pharmaceuticals. The drug's additional indications and formulations are under further development. Dr. Yuan has also been serving as a physician consultant for many major pharmaceutical companies, law firms, as well as U.S. government agencies.

Additionally, since 1997, Dr. Yuan has developed strong interests in herbal medicine research. At the Tang Center, Dr. Yuan has published many articles and several books related to herbal medicine and new drug discovery/development. Dr. Yuan also serves as the Editor-in-Chief of the *American Journal of Chinese Medicine*, the oldest integrative and complementary medicine journal in the U.S.

Xiao-Kun ZHANG

Dr. Xiao-kun Zhang is a Professor and Dean of School of Pharmaceutical Sciences, Dean of Institute for Biomedical Research, Xiamen University, and a Professor of the Burnham Institute for Medical Research and a Guest Professor of Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences. He obtained his B.S. degree in Biochemistry from Xiamen University in 1982. From 1984, he studied biochemistry in University of Vermont and earned his Ph.D. in 1989. He spent three years as a postdoctoral fellow at the Burnham Institute prior to his appointment to the faculty in 1992. Dr. Zhang has been working on a class of proteins called nuclear hormone receptors, which include receptors for steroid hormone, thyroid hormone, estrogen, androgen, vitamin D and vitamin A, for more than 20 years. These nuclear hormone receptors are attractive molecular targets for drug development because they regulate many essential biological processes and they have unique ligand binding pockets for binding small molecules. Today, many big pharmaceutical companies have been spending enormous amount of money for developing nuclear receptor-based drugs. Dr. Zhang has published more than 100 papers in international core journals including Cell, Nature and Science. He has been the Principle Investigator in more than 10 research projects awarded by grants including NIH R01, USARMY and CA Foundation during the last decade. He has obtained 9 patents in USA and applied one patent in China. Some of his patents have been licensed to pharmaceutical companies in USA. His first synthetic vitamin A derivative (RXR-selective retinoid) named Targretin was approved by the FDA (Food and Drug Administration in the USA) for treating skin cancer in 1999. This compound is now in phase III clinical trial for human lung cancer and phase II trial for breast cancer and diabetes. This is extremely exciting, and represents the first example that molecular-based approach can be used for developing new medicine.

Academician
BIOGRAPHICAL SKETCH

Hong-Hao ZHOU

Professor Hong-Hao Zhou, a member of the Chinese Academy of Engineering, vice president of Scientific Association in Hunan province, has graduated from Department of Medicine, Wuhan University of Medicine in 1962. He has served successively as resident in internal medicine, lecture in Hunan Medical University, association professor, professor and vice-president. Now Zhou is the director of Institute of Clinical Pharmacology and Institute of Pharmacogenetics, Central South University (CSU), director of Xiangya Medical Laboratory, CSU, chair professor in National Key Discipline Pharmacology in CSU, and director of National Training Center of Clinical Pharmacology and National Training Center of Drug Clinical Research.

Academician Hong-Hao Zhou is the pioneer and leader of pharmacogenetics and pharmacogenomics in China, who has devoted himself to the education and research of pharmacogenetics and pharmacogenomics. His main contribution in science includes discovery of ethnic and inter-individual differences in drug response caused by genetic factors, and identification of its mechanism; establishment of a theoretical system in pharmacogenetics that is full of national and ethnic characteristics; the application of pharmacogenetic theory into clinical practice, and initiation of "tailored" individualized drug treatment based on pharmacogenetics and pharmacogenomics.

After more than 30 years of systematic research, a large amount of scientific achievements have been generated and accumulated by Zhou and his academic team. More than 200 English papers have been published on international SCI journals such as <The New England Journal of Medicine>. Zhou has edited and published 4 monographs and textbooks of <Pharmacogenetics> in Chinese and English, 6 Chinese and English textbooks of <pharmacology> for five-year and eight-year higher medical school, and 3 monographs in relative area. He has also trained more than 200 Master students, PhD students and Post-Doctors. Academician Zhou is one of the founders of International Association of Pharmacogenetics and Pharmacogenomics, founder and first president of the Division of Pharmacogenomics, Chinese Pharmacological Society.

Yuquan WEI

Professor Wei, an academician of the Chinese Academy of Sciences, is currently a Vice President of Sichuan University, and Distinguished Professor of the "Chang Jiang Scholars Program". He was a winner of the National Outstanding Youth Foundation in 1997, Bioengineering Team Leader of the "863" Biological and Agricultural Technology Industry during the Tenth "Five-Year-Plan" Period, Vice-chairman of the Chinese Medical Association, Chief Scientist of the "973" Program, and was the head for the innovation research group of the National Natural Science Funds.

Prof. Wei is also a Director of the State Key Laboratory of Biotherapy for Human Diseases, Standing Deputy Director of the Second Biological Department of the Fifth Science and Technology Commission of the Ministry of Education, Subeditor of *Human Gene Therapy*, member of the editorial board for *Chinese Journal of Medical Genetics*, and Reviewer of *Chinese Science Bulletin* and *Science China*.

Prof. Wei is mainly engaged in the fundamental research, application development, and clinical treatment for biological treatment of tumor, and particularly, in developing novel methods for immune-gene therapy. He combines active immune treatment with blood vessel treatment, bringing a revolution to the treatment and research. He combines xenogenic homologous gene with xenogenic immune exclusive reaction and autoimmune reaction, exploring a new therapy of tumor which can well deal with tolerance of auto-antigen. In addition, he has observed that lymphocytes can kill cancer cells in the tumor microenvironment. He has also discovered that by disturbing HSP70 expression, cancel cells can die naturally without damaging normal cells. Professor Wei's research achievements have appeared on a variety of international journals, including Nature Med，PNAS，Cancer Res，Blood，Journal of Immunol. All his achievements have served as a new approach to the fundamental research in cancer treatment.

Currently, Prof. Wei is an Expert Team Leader of the Biological Engineering Group of the National "863" Program. Meanwhile, he is also responsible for some projects of the "973" Program and key projects of the National Natural Science Foundation of China. He has supervised a number of postgraduate and doctorate students.

Moderator
BIOGRAPHICAL SKETCH

Ya Cao

Prof. Cao obtained her MD from Xiangya School of Medicine in 1981. Supported by UICC Fellowship and Rockefeller Foundation Fellowship, she worked in Frederick Cancer Research and Development Center of National Cancer Institute in USA as a postdoctoral and visiting scholar from 1985 to 1997. Prof. Cao was elected as professor in 1992. She was awarded the Distinguished Young Scholars of China in 1995. She was appointed as deputy director of Cancer Research Institute in 1997, deputy dean of Xiangya School of Medicine in 2001, director of Molecular Imaging Centre in 2009, and director of Carcinogenesis and Invasion Key Laboratory of Education Ministry in 2011.

Prof. Cao has served as executive director of Chinese Association of Pathophysiology, chairman of Committee of Oncology of Chinese Association of Pathophysiology, and vice-chairperson of Molecular Imaging Committee of the Biophysical Society of China. Prof. Cao is also the expert reviewer of major foundations and academic committees including “National Natural Science Foundation of China (NNSFC)”, “National Prize for Natural Sciences of China” and ”The Academic Degrees Committee of the State Council”. She is also an associate editor for 《Molecular Carcinogenesis》, 《Plos one》, 《Cancer Prevention Res》.

Prof. Cao has more than 20 years of experience in virus -mediated tumorigenesis, and established an excellent team in cancer research. She has published more than 100 peer-reviewed papers. Prof. Cao was awarded the first prize for “Natural Scientific Awards of Hunan Province” in 2011, the second prize for “Higher Education Outstanding Scientific Research Output Awards of Ministry of Education of China” in 2010. She published a viewpoint paper on 《*Nature Reviews Cance*》 *in 2011.*

Yizhong Dai

Dr. Dai Lizhong, who received his Ph.D from Princeton University and completed his postdoctoral research at MIT, is honored as the distinguished expert of the "1000 talent project" by the Central Organization Ministry of China and the "100 talent project" by the People's Government of Hunan. Dr. Dai also serves as the science advisor of the Association of Overseas Chinese. In 1992, upon completion of his master’s degree at Peking University, he traveled to the USA in order to further his education. There, he worked as a senior manager at the American corporation, Gen-probe. Currently, he is the president of Sansure Biotech Inc., vice president of the Pharmaceutical Industry Association of Hunan Province, and professor at both Central South University and Hunan University.

Dr. Dai’s research work mainly focuses on genetic diagnostics of Human pathogenic microorganisms and genetic diagnostic reagents. He transfers his rich experience in molecular diagnostics and biological enzyme along with his excellent academic background and broad vision into advancing modern technologies. Under his leadership and guidance, the Sansure research team has independently overcome key problems in magnetic bead binding while congruently improving one-step technology in order to target infectious diseases and cancer-related biomarkers. Thus far, more than 30 world-class reagents and devices have been placed on the market, having acquired 30 independent patents. The products are widely used in domestic hospitals and institutes, enabling effective control and prevention of viral hepatitis and blood-borne infectious diseases. Furthermore, Sansure’s products and service have been delivered to international markets such as Southeast Asia, the Middle East and so forth, greatly improving technology at the domestic level and competiveness of domestic products in the global market.
Led by Dr. Dai, Sansure has developed into the largest diagnostic reagent manufacturer in Hunan within only 4 years. Numerous honors have been awarded to him because of his creative findings and industrialization. His extraordinary stories were covered by various sources such as People’s Daily, Guangming Daily and Hunan Daily.

ABSTRACTS (alphabetic order of presenters)

Isoform-selective Hsp90 C Inhibitors and Therapeutic Application

Brian S. J. Blagg
The University of Kansas
Department of Medicinal Chemistry

Hsp90 is a molecular chaperone that is responsible for the conformational maturation of more than 200 known substrates, many of which are associated with signaling pathways that are hijacked by transformed cells. As a result, Hsp90 has evolved into a promising anti-cancer target as multiple signaling nodes can be targeted simultaneously through Hsp90 inhibition. More than 15 small molecules that bind to the Hsp90 N-terminal binding pocket have entered clinical trials for evaluation against a number of human malignancies, but unfortunately, a lack of efficacy and/or toxicity has been observed for many of these candidates. In an effort to develop new strategies toward Hsp90 inhibition, we have focused on inhibition of the C-terminal binding site as well as the development of isoform-selective inhibitors. These methods have resulted in molecules that can segregate induction of the pro-survival heat shock response from client protein inhibition/degradation, and consequently have afforded new methods for the potential treatment of protein misfolding diseases and cancer, respectively. In addition, the first isoform-selective inhibitor of Grp94 has been produced and biology associated with inhibition of this chaperone may provide new therapeutic strategies. This lecture will provide an overview of Hsp90 C-terminal and isoform-selective inhibitors for the treatment of various diseases.

Repurposed Medicine

Tony Giordano
TheraVasc Pharmaceutical Inc.

Drug repurposing offers a rapid and cost-effective strategy for entering the market place while also reducing the risks associated with traditional drug development programs. This presentation will look at three different repurposing strategies. The first involves the repurposing of sodium nitrite from a injectable being used to treat cyanide poisoning to an oral formulation for PAD. Animal data demonstrating that this product selectively stimulates angiogenesis, enhances wound healing, inhibits nephropathy, and prevents tissue necrosis will be presented and early clinical data will be reviewed. The second strategy makes use of the medical foods path to move a GRAS product to the congestive heart failure market, including a discussion of the regulatory requirements for medical food development. And the last focuses on the repurposing of a biologic, insulin, from an injectable for the treatment of diabetes to a nasal formulation for treating Alzheimer's disease.

Understanding Antibody and Fc Receptor Function in the search for new bio markers For the Development of New Therapeutics In Inflammation and Cancer

P. Mark Hogarth
Burnet Institute, Australia

Antibodies are the highly evolved, specific and effective mediators of immunity. The antibodies activate leucocytes through specific cell-surface receptors called Fc receptors (FcR). The interaction between antibodies and Fc receptors is of considerable interest in medicine, and the biotechnology and pharmaceutical industries. Understanding antibody and Fc receptor function will underpinned the development of new strategies and ultimately new drugs and biopharmaceutical is the treatment of disease. It is likely in the decades to come targeting this interaction will change therapeutics to inhibit pathological inflammation, enhance vaccine effectiveness and develop more potent and useful monoclonal antibodies.

In addition the utility of therapeutic monoclonal antibodies as a therapeutic modality will only be extended by the search for new disease related markers i.e. biomarkers. The spectacular success of monoclonal antibodies has really been achieved in relatively few diseases and challenges remain for the development of new markets which in part are due to a lack of appropriate markers. Structured multicentre approaches in the search for bio markers such as the Cooperative Research Centre program in Australia offer coordinated multidisciplinary approach to the discovery of potentially useful targets.

The interaction between Fc receptors and antibodies and is to be considered in three contexts. First antibodies under normal circumstances induced inflammation through Fc receptors for the eradication of pathogens and form a significant component of effective vaccines.

Second In pathological immunity, for example autoimmune diseases, antibody: antigen complexes between antigen and antibody (immune complexes activate destructive inflammatory processes which are responsible for tissue destruction for example immune complex vasculitis, nephritis, and significant morbidity and indeed mortality in certain diseases for example lupus, immune thrombocytopenia.

Third, monoclonal antibody therapeutics form the basis of much of the drug development pipeline at present. Their spectacular success in the treatment of relatively few diseases has driven the interest in the further development of these as a therapeutic modality across a spectrum of human ailments. Antibodies such as rituximab are therapeutically useful because of their capacity to harness the effector systems of the innate and adaptive immune cells through Fc receptors.

Understanding on manipulating the interaction between antibodies and Fc receptors will help shape research and industry in the future.

ABSTRACTS

China takes on pharma innovation

Hualiang Jiang
Shanghai Institute of Materia medica, Chinese Academy of Sciences

More and more, both the Chinese government and industry are emphasizing innovation in drug discovery and development. A key component of this issue was the national 'New Drug Creation and Development programme', launched in 2008 to provide 6.6 billion yuan (US$960 million) to accelerate domestic drug R&D. This initiative supports both academic groups and pharmaceutical companies. The programme outlined three missions: to improve the infrastructure of drug discovery and development by providing support to establish platforms for drug discovery and development, and to improve good laboratory practice [GLP], good manufacturing practice [GMP] and good clinical practice [GCP] standards; to discover new molecular entities and new biologics (first-in-class and best-in-class); and to develop prospective technologies for drug R&D. This talk will introduce my personal view for the pharma innovation in China.

Performing Pharmacokinetic Studies in Juvenile and Adult Domesticated Swine: Does the PK Resemble Human Parameters?

Gregory T. Knipp,
Purdue University, College of Pharmacy

The term "Therapeutic Orphans" was first coined in 1962 to describe pediatric populations. Fifty years later, that classification still stands as there is an aversion to developing new therapeutic agents for children. Pediatric drug development is a daunting task due to the various biological, clinical, and formulation challenges associated with age-based populations, particularly on a global basis. The lack of age-appropriate formulations is a topic that has recently garnered a significant amount of interest throughout industry, by regulatory agencies, and by clinicians. One of the primary causes for this lack of development is the inability to accurately predict clinical safety and efficacy in the dynamic pediatric developmental stages during preclinical studies. This lecture will highlight some of the challenges that are currently faced in the development of pediatric medicines. Moreover, the results of a case study from our laboratory using rifampin formulations, a first-line antibiotic utilized during tuberculosis therapy, which was administered to both juvenile and adult pigs to determine relevant pharmacokinetic (PK) parameters, will be presented. Results indicated significant similarities in absorption and elimination parameters between pigs and humans. Furthermore, age-based changes in the porcine PK parameters were consistent with similar changes observed in humans. Finally, additional examples illustrating the potential utility of the adult pig as a surrogate of humans for preclinical PK evaluation will be presented.

Bioactive Secondary Metabolites from Nature and New Drug Discovery

Ji-Kai Liu
State Key Laboratory of Phytochemistry and Plant Resource in West China, Kunming 650204, P. R. China

China is extraordinary rich in plants and higher fungi. These bio-resources belong to the very productive biologically sources which produce a large and diverse variety of secondary metabolites. We have been interested in the biologically active substances present in untapped and diverse source of plants and higher fungi from west China.

In order to search for naturally occurring bioactive metabolites from plants and higher fungi we investigated the chemical constituents of more than 200 higher fungi and plants in Southwest of China since last 15 years. More than 1500 compounds including 500 novel toxin, pigments, bioactive compounds belong to unique amino acids, terpenoids, phenolics and nitrogen-containing compounds were isolated. Some of them showed very interesting pharmacological activities. The isolation, structural elucidation and biologically activity of the new compounds are discussed.

Targets of the tumor microenvironment: opportunities and challenges.

Giovanni Melillo
Oncology at Bristol-Myers Squibb

The concept that the tumor microenvironment plays a critical role in cancer initiation and progression is widely accepted. Despite much emphasis has been recently placed on genetic alterations that may drive cancer cell growth and may represent attractive targets for drug development, it is also well recognized that the active cross-talk between cancer cells and host cells will ultimately determine the fate of tumor growth and the response to therapy.

Many factors in the tumor microenvironment may profoundly affect the biological behavior of cancer cells and their response to therapeutic agents. Low oxygen levels (hypoxia and/or anoxia) are frequently detected in human cancers and are a hallmark of the tumor microenvironment. Hypoxia triggers a shift in tumor metabolism, increasing the production of angiogenic factors and activating pathways that mediate invasion and metastasis. Overall, a hypoxia tumor microenvironment has a negative influence on the potential efficacy of chemotherapy and radiation therapy, and is ultimately associated with poor patient prognosis. Conversely, intra-tumor hypoxia may represent a unique opportunity for the development of therapeutic approaches that selectively target hypoxic cells, sparing normal oxygenated tissues. Hypoxia Inducible Factor 1 (HIF-1) is a master regulator of the transcriptional response to low oxygen levels. Several approaches have been pursued to develop small molecules targeting HIF-1. Although the majority of HIF-1 inhibitors identified lack specificity, evidence of target

ABSTRACTS (alphabetic order of presenters)

modulation associated with anti-tumor activity has been provided both in xenograft models and in early clinical trials. Combination therapies with antiangiogenic agents, thought to increase intra-tumor hypoxia, may provide a unique setting in which to exploit HIF-targeted therapies. Given the challenges associated with directly targeting HIF-1, many strategies have been proposed to target downstream mediators of HIF transcriptional activity. Evidence will be discussed that highlights novel pathways activated in the tumor microenvironment and that may represent attractive targets for the development of novel cancer therapeutics.

Preventing and Curing Infectious Diseases: Carbohydrate Vaccines and Continuous Flow Synthesis

Peter H. Seeberger
Max Planck Institute of Colloids and Interfaces

Most pathogens including bacteria, fungi, viruses and protozoa carry unique glycans on their surface. Currently, several vaccines against bacteria are marketed very successfully. Since many pathogens cannot be cultured and the isolation of pure oligosaccharides is extremely difficult, synthetic oligosaccharide antigens provide now a viable alternative. Based on the automated synthesis platform that has now been completely overhauled, we are currently developing multiple vaccine candidates against bacterial infections, fungi, and protozoan parasites. In addition to their function as antigens, the synthetic oligosaccharides serve as tools to create monoclonal antibodies, and to establish glycan microarrays to map vaccine epitopes. In this lecture *B. anthracis*, *C. difficile* and malaria will be used as examples to illustrate the approach.

Traditionally, chemists have performed reactions in a batch -wise mode. In recent years continuous flow systems have become increasingly interesting to practitioners of synthetic chemistry. Described is the use of a continuous flow system to produce the anti-malaria drug artemisinin in large quantities.

Empowered Antibodies for Cancer Therapy: From Early Stage Research to a Clinically Approved Drug

Peter Senter
Seattle Genetics, Inc.

Monoclonal antibodies (mAbs) have played a major role in cancer medicine, with active drugs such as trastuzumab (Herceptin), cetuximab (Erbitux), bevacizumab (Avastin) and rituximab (Rituxan) in a wide range of therapeutic applications. The mechanism of activity of these agents involves cell signaling, effector functions through interactions with Fc□ receptor positive cells, and complement fixation. In order to improve activity, attention has turned towards enhancing mAb ADCC activity by selecting stronger Fc□ receptor binders. This has been accomplished using engineered cell lines that generate mAbs with optimized Fc regions designed for enhanced receptor binding (Xencor technology), or by changing the carbohydrate structures on the heavy chains of mAbs (Glycart and Biowa technologies). We have discovered an alternative approach involving the identification of biochemical inhibitors of the enzymes fucosyl transferase and GDP-d-mannose dehydratase (GMD). The inhibitors are fucose analogues, and can be added to cells that not only produce mAbs, but other proteins in which fucosylation is important for activity. Several applications of this technology will be discussed, both in vitro and in vivo. mAb activity can also be enhanced by appending highly potent cytotoxic drugs to them. While this area has been investigated for many years, it has only been recently that mAb-drug conjugates have demonstrated the potential for playing a convincing role in cancer chemotherapy. The field has advanced significantly, with new insights gained into the roles that antigen target, normal tissue expression, drug potency, drug mechanism, linker stability, and mechanism of drug release play in generating active antibody drug conjugates (ADC) with acceptable safety profiles. ADCETRIS (Brentuximab vedotin, SGN-35) is an example an ADC that has been designed with these parameters in mind. In August 2011, ADCETRIS was approved by the US Food and Drug Administration for use in relapsed or refractory Hodgkin lymphoma and relapsed or refractory systemic anaplastic large cell lymphoma, two diseases with significant unmet medical needs. An overview of how this drug was developed and how we are extending the technology will be provided.

Artificial Genetic Switch Based on Pyrrole-Imidazole Polyamide Conjugate

Hiroshi Sugiyama
Department of Chemistry, Graduate School of Science, Kyoto University, Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University

Cellular reprogramming involves profound alterations in genome-wide gene expression that is precisely controlled at various distinctive levels where the appropriate genes are switched “ON” and “OFF” at the right place and time. Transcriptional activators play a central role in the regulation of gene expression and have the ability to manipulate the specification of cell fate. Consistent with this idea, artificial induction of pluripotency in somatic cells through enforced transcriptional activation of the four factors was achieved to offer new modes of therapy. Notwithstanding the recent promising breakthroughs, several hurdles, including the retention of epigenetic memory, need to be overcome before the possible therapeutic use of induced pluripotent stem cells (iPSCs). Since dynamic chromatin structure is connected intimately with the fundamental nature of a cell, chromatin modifiers could establish and maintain pluripotent status in somatic cells. As chromatin modifiers lack selectivity, supplementing them with distinctive recognition could pave the way for precise

ABSTRACTS

up-regulation of particular gene(s) conferring to pluripotency.

As a novel chemical approach to control cell fate via site-specific chromatin modifications, we synthesized a new class of compound termed, SAHA-PIP containing sequence-specific pyrrole-imidazole polyamides (PIPs) and chromatin modifying histone deacetylase (HDAC) inhibitor like SAHA. As chromatin modifications confer to pluripotency, our first library of 16 SAHA-PIPs (A-P) with differential gene inducing ability was screened for their effect on iPSC factors. Certain SAHA-PIPs were shown to distinctively activate the iPSC factors (*Oct-3/4*, *Nanog*, *Sox2*, *Klf4* and *c-Myc*) by triggering epigenetic marks that are associated with transcriptionally permissive chromatin in mouse embryonic fibroblasts (MEF). Synthesis and screening of a series of derivatives of our hit SAHA-PIP `E` indicated that our programmable small DNA-binding SAHA-PIPs could be developed to induce the specific expression of core pluripotent genes. In the second library of SAHA-PIP (Q-Φ) with improved sequence recognition ability, SAHA-PIP `δ` dramatically induced *Oct-3/4* and *Nanog* in MEF by about 30 to 40-fold. Genome-wide gene analysis suggested that `δ` induced multiple pluripotency genes by more than ten-fold to initiate cellular reprogramming by reprogramming into epithelial cells.

Therapeutic Use of Nucleic Acid-based Agents

Lun-Quan Sun
Center for Molecular Medicine, Xiangya Hospital, Central South University

Small nucleic acid-based cancer therapeutics commonly encompasses a range of agents including DNAzymes, short interfering RNA, antisense oligonucleotides, and ribozymes. When engineered, these agents can modify the unwanted gene expression in a sequence-specific manner and thus are viewed as powerful agents in silencing the disease-causing genes in clinical applications.

DNAzyme molecules, generated in an *in vitro* selection system, are DNA sequences with inherit stability and catalytic activity, inducing the target RNA destruction in a highly sequence-specific way. These single-stranded molecules target the mRNA with complementary sequence, and cleave the link between an unpaired purine (A or G) and a paired pyrimidine (C or U) in the RNA by the cation-dependent domain.

Compared with other oligonucleotide agents, DNAzyme exhibits more advantages as a nucleic acid-based therapeutic agent. For example, DNAzymes, being composed of DNA, are not only easier and less expensive to synthesize, but also much more resistant to degradation than RNA molecules *in vivo*. As is true for clinical development of all targeted therapies, crucial issues including the early determination of optimal biological dose, ensuring that the target is relevant in the patient population being studied, and the rational use of combination strategies need to be addressed as early as possible. Efforts such as introduction of LNA have been made to solving problems of efficient binding at low DNAzyme concentrations and of target accessibility.

Thus far, DNAzymes have been explored as anti-cancer and antiviral therapeutics in different settings, and now have been tested in patients.

The foundation of molecular medicine: Molecular tools

Weihong Tan
Molecular Science and Biomedicine Laboratory， State Key Laboratory of Chemo/Bio-Sensing and Chemometrics, College of Biology and College of Chemistry and Chemical Engineering, Hunan University, Changsha, 410082, P. R. China
Department of Chemistry and Department of Physiology and Functional Genomics, Center for Research at Bio/nano Interface, Moffitt Cancer Center and Shands Cancer Center, University of Florida, Gainesville, FL 32611, USA

To produce a full understanding of the molecular basis of diseases, we will need to have novel molecular tools to recognize disease targets of interest. Currently, molecular medicine lacks effective molecular probes for understanding and treating human diseases. Of the many potential molecular probes, a new class of designer nucleic acids (called aptamers) holds great potential. Aptamers are single stranded DNA/RNA which can recognize specific targets, and can be selected for single proteins and even small molecules. Recently, we have applied a novel cell-based aptamer selection strategy (Cell-SELEX) to generate multiple aptamers for the specific recognition of biological cells without prior knowledge of the biomarkers for the specific type of cells. Cell-SELEX uses whole intact cells as target for aptamer selection in order to produce molecular probes binding specifically to the target cells. The selection process is simple, fast, and reproducible. The selected aptamers have dissociation constants in the nanomolar to picomolar range. So far, we have selected molecular probes for many different cancers and used these aptamers in making molecular tools for cancer studies. These tools have been used for ultrasensitive detection of tumors, molecular imaging and profiling of individual cancer patients, targeted drug delivery, and, most importantly, cancer biomarker discovery. We will report our most recent progress in this exciting research area especially in molecular elucidation of the cancer biomarkers.

Oxaboroles as Anti-parasitic Agents

Thomas W. von Geldern
Embedded Consulting

The Neglected Tropical Diseases (NTDs) have historically received little attention from traditional pharmaceutical companies over the last eighty years. To remedy this situation, the Drugs for Neglected Diseases *initiative* (DND*i*) has developed an innovative collaborative model for lead identification

ABSTRACTS (alphabetic order of presenters)

and optimization, and applied this to the family of kinetoplastid parasites.

The first application of this strategy targeted Human African Trypanosomiasis (HAT, or African Sleeping Sickness). Starting with a novel chemical lead based on a boron-containing core, iterative optimization of pharmacokinetic properties and brain penetration led to the development of candidate SCYX-7158. This compound is currently in Phase I clinical trials, targeted for the treatment of Stage 1 (hemo-lymphatic) and Stage 2 (meningo-encephalitic) HAT disease.

Maximize Patent Value for Innovative Pharmaceutical and Biotech Companies

Ningling Wang
Finnegan, Henderson, Farabow, Garrett & Dunner, LLP

Patent protection and enforcement have been a key to the success of life science industry. This presentation discusses how to maximize patent value for innovative pharmaceutical and biotech companies, especially in the U.S. Specifically, this presentation covers the following topics:

- Drafting and obtaining strong patents;
- Patent Term Extension;
- Opportunities and challenges under America Invents Act; and
- Tips and suggestions for innovative pharmaceutical and biotech companies.

New Drug Development in the U.S.
Using Methylnaltrexone as an Example

Chun-Su Yuan
Tang Center for Herbal Medicine Research, the University of Chicago

Discovery of novel bioactive compounds is the initial step of drug development. Over half of the drugs developed over the past several decades are natural products, their derivatives, or their synthetic and semisynthetic analogues. During the development of new drugs, research is first conducted in animal models. Certain pharmacology and toxicology studies must be completed to assess a new compound and its potential effects in the body prior to human clinical trial. The primary goal of a clinical trial is to establish objective evidence of safety and effectiveness of the drug being evaluated. Different phases (including phase 0) of clinical investigation will be briefly introduced.

To discuss new drug development in the U.S., based on my own experience, methylnaltrexone (MNTX) clinical development will be used as an example. As we know, the opium poppy has been used for thousands years to control diarrhea and relieve pain. In 1803, a pure active alkaline substance, "morphine," was isolated from opium, and it was named after Morpheus, the Greek god of dreams. Today, morphine and other opioids are widely used to treat moderate to severe pain, which is a centrally-mediated opioid analgesic action. However, the most common side effect of opioid pain medication is opioid bowel dysfunction, such as constipation and post-operative ileus, a peripherally-mediated opioid effect. Opioid induced bowel dysfunction is a very significant medical problem. In addition, tolerance develops with repeated use of opioids to relieve pain, but that tolerance does not appear to extend to the gut. From 1994, at the University of Chicago, our group conducted preclinical studies and phase 1 and phase 2 clinical trials on MNTX for opioid bowel dysfunction. Our university licensed MNTX to Progenics Pharmaceuticals in 2001. In 2005, Progenics and Wyeth Pharmaceuticals entered a MNTX joint development for opioid-induced side effects. In 2008, the U.S. FDA approved MNTX (Relistor®). By 2011, this drug was approved for use in over 50 countries worldwide, marketed by Salix Pharmaceuticals. The drug's additional indications and formulations are under further development, which will also be discussed.

Targeting Nongenomic Action of Nuclear Receptors for Drug Development

Xiao-kun Zhang
School of Pharmaceutical Sciences, Xiamen University, Xiamen 361005, Fujian, China

Nuclear receptors are intracellular proteins mediating the biological activities of steroids, thyroid hormones, vitamin D and vitamin A metabolites (retinoids). Upon binding to their ligands, i.e. steroids or vitamin derivatives, they control various endocrine pathways relevant to multiple disease and cancers, making them the second most commonly targeted proteins for all FDA-approved drugs. Nuclear receptors are conventionally considered as ligand-activated transcription factors that regulate the activation of a variety of important target genes. Recent advance has indicated that nuclear receptors could act nongenomically in the cytoplasm to modulate important biological processes relevant to the development of diseases and their drug resistance, providing new strategies for drug development by targeting the nongenomic action of nuclear receptors. We have been interested in studying the nongenomic action of two nuclear receptors, Nur77 and RXRa in the context of developing new therapeutic agents for cancer therapy. Nur77, also known as TR3 or NGFI-B, is perhaps the most potent apoptotic member of the nuclear receptor superfamily. We previously found that Nur77 induces apoptosis of cancer cells by targeting mitochondria, unraveling a novel nongenomic mechanism utilized by nuclear receptors. Nur77 mitochondrial targeting requires its interaction with Bcl-2. Upon binding to Nur77, Bcl-2 undergoes a conformational change, leading to its conversion from an anti-apoptotic to a pro-apoptotic molecule. These results identified a new apoptotic pathway involving nongenomic

ABSTRACTS

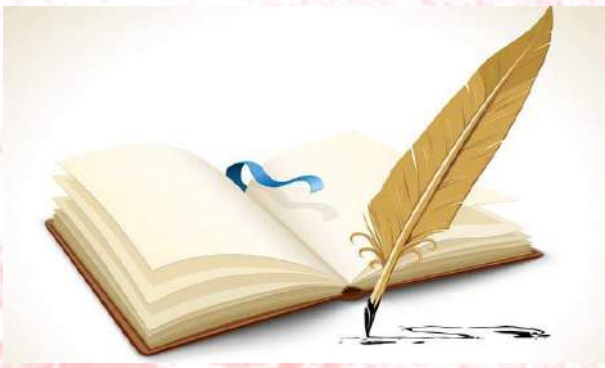
action of Nur77. RXRa is another member of the nuclear receptor superfamily, which plays a key role in many biological processes. Altered expression or function of RXRa contributes to cancer development, suggesting that RXRa can serve as a target for developing new cancer therapeutics. We recently reported that an N-terminally-truncated RXRα (tRXRa) protein is specifically expressed in cancer cells. Unlike the full-length RXRα that resides in the nucleus, tRXRa is cytoplasmic and interacts with the p85α subunit of PI3K to activate the PI3K/AKT survival pathway in cancer cells. As modulation of Nur77 -mediated apoptotic and tRXRa-mediated PI3K/AKT survival pathways is effective in determining the death and survival of cancer cells as well as their sensitivity to therapy, agents targeting both pathways have been developed and evaluated for cancer therapy.

The Application and Prospective of Individualized Medicine

Hong-Hao Zhou
Central South University

Human Genome Project (HGP) was initiated in 1990 and completed in 2003, which has identified and mapped the whole human DNA sequences. From then on, a brand new medical model focused on genomic medicine has been created, and a new era of genomic medicine or individualized medicine has come. The completion of HGP has clarified the genetic basis of diseases and enabled prediction, prevention, early diagnosis and individualized treatment of them. Individualized drug treatment based on genetic variation has become a relatively mature field in individualized medicine and been translated into clinical application, owning to more than 60 years of trial experience and clinical research data in pharmacogenetics, the thorough recognition of genetic mechanism of inter-individual differences in drug response, i.e. the role of polymorphism of drug metabolizing enzymes, drug transporters and drug targets in the effectiveness and toxicity of many drugs, and the establishment of genetic analytical methods. Until now, nearly 100 drugs have genetic labels approved by U.S. FDA, suggesting patients with different genotypes the potential effect and toxicity of these drugs. It also requires further detection or concern of the effects of more than 40 kinds of genetic variations in the effectiveness and safety of these drugs, and adjustment of drug option and drug dose. A large number of gene detection technologies and kits applicable in the clinical individualized drug treatment have also been approved. For example, detection of TPMT genetic variation has become conventional in the treatment of pediatric acute lymphocytic leukemia by 6-purinethol, 6-thioguanine or azathioprine; detection of UGT1A1 gene haplotype has been used to predict the toxicity of Irinotecan and as basis of drug option and dose adjustment; detection of K-ras genetic variation and Her 2 receptor overexpression has been used to determine whether Citeaux should be applied to lung cancer or Herceptin to breast cancer. In addition, the role of many genetic and non-genetic factors affecting therapeutic dose of anticoagulant drug warfarin have been quantified, and a calculation formula regarding the relation between these factors and warfarin dose has been summarized, based on which non-profit software and website has been established for clinical use. Institute of Clinical Pharmacology, Central South University has initiated and promoted “gene-guided individualized drug treatment” in China since mid-1990s, based on 30 years of research on pharmacogenetics. The institute serves as one of the seven centers of Pharmacogenetics for Every Nation Initiative (PGENI) in the world and the only center in East Asia. The institute actively promotes gene-guided individualized therapy, and translates pharmacogenomics and pharmacogenetics research into clinical practice. A series of clinical detection programs have been carried out in Hunan, Beijing, Shanghai, Shandong, Henan, Guangdong, Anhui, Hubei, Jiangxi and Chongqing. Until now, more than 10 thousand patients with hypertension, organ transplantation, cancer or diabetes have been gene-detected and their drugs adjusted in the consulting service of individualized therapy, thus guaranteeing the safe and effective drug treatment of these patients.

Great challenge is still facing individualized medicine, due to many reasons: the extremely complexity of human biological system, multiple factors that may lead to inter-individual differences in drug response; the pertinence, sensitivity, accuracy, feasibility and standardization of molecular diagnostic methods; the insufficiency of health-care system to provide molecular technology; the uncertainty of pharmacogenomics data and the difficulty of analysis; the new ethical, legal and social problems generated; and the prospect of policy management, especially the establishment and training of educational and professional teams in individualized medicine.



Introduction

Organizers & Sponsors

Welcome to Changsha

It lies in the northeast of Hunan, by the lower stretch of the Xiangjiang River. Changsha is one of the 24 historically and culturally renowned cities of the whole nation first announced by the State Council . With an area of 11,800 square kilometers and a population of 6.7697 million, it consists of six districts (Furong, Tianxin, Yuelu, Kaifu, Yuhua and Wangcheng), two counties (Changsha and Ningxiang) and Liuyang city. Changsha, the famous city in the Chu and the Han with a history of over 3000 years, is the provincial capital of Hunan, the political, economic, scientific, educational, cultural an business center of the province, and also a major collection an distribution center for capital funds, technologies and raw materials, as well as a major transport hub in central-south China.

It is located in the beautiful and richly endowed river-valley plain in the central part of Hunan Province, bordering on Luoxiao Mountain on the east, Wuling Mountain on the west, adjoining Dongting Lake on the north and bordered on the south by Hengshan Mountain. It has a moist monsoon climate of the subtropical zone. The average annual air temperature is 17.2℃and the rainfall 1361 mm. The frostiness period lasts 275 days and the yearly duration of sunshine amounts to 1600 hours.

Changsha has 23 institutions of higher education. Its number of universities and college students ranks number one in China for every ten thousand citizens . At the moment, it has 35 academicians of the Chinese Academy of Sciences and the Chinese Academy of Engineering. It is one of the Chinese cities with a big scientific research contingent. Its internationally renowned scientists include Chen Guoda, founder of the theory of land depression and Yuan Longping, known a " father of rice hybridization " . Its rice hybridization, giant computer, biological and materials engineering technologies have reached the international advanced standards. Changsha ranks 12th in overall strength among the 265 Chinese cities at and above the prefectural level. It is the home of famous brands and trade marks, like " Yuanda " , " Baisha " and " Menadale " . Changsha has established friendly ties with cities in a dozen countries, including Kagoshima in Japan and Saint Paul in the United States.

Changsha has jurisdiction over Furong, Tianxin, Yuelu, Kaifu and Yuhua districts, Changsha, Wangcheng and Ningxiang counties and Liuyang city. The total area is 1,800 square kms including 554 square kms of city proper are. The total population stood at 5,720,000 of whom 1,640,000 were not connected with agriculture.

Changsha, with a long history, rich natural resources, scenic beauty and outstanding personalities, is a famous place investing and initiating enterprises, engaging in business and spending holidays.

CENTRAL SOUTH UNIVERSITY

Situated in the famous historical and cultural city of Changsha，Central South University（CSU）is a comprehensive and national key university under the direct administration of the Ministry of Education of China.The University is among the first group admitted into both project 211，a project of building national key universities and colleges for the 21st century，and Project 985，a joint constructive project of building world-class universities co-sponsored by the Chinese central government and local governments.Gao Wenbing is the Party Secretary of the CSU Committee and Zhang Yaoxue，member of the Chinese Academy of Engineering，is CSU President.

Approved by the State Council，CUS was established on April 29, 2000 by merging three separate universities：Hunan Medical University（HMU），Changsha Railway University（CRU）, and Central South University of Technology(CSUT).CSU covers an area of 5,117 mu (341hectares).

HMU was formerly under the administration of the Ministry of Health。Its history dates back to 1914 when Xiangya Medical college was founded through the joint efforts of Hunan Yuqun Society and the Yale-China Association in the United States。CRU，which was one of the universities under the administration of the Ministry of Railways，initially restructured in 1953 as Central South University of Civil Engineering and and Architecture，was established in 1960 based on some of its predecessor's departments，teaching and research divisions。CSUT，which was one of universities of higher education began。It merged six universities，including Wuhan University，SunYat- University，Guangxi University，Hunan University，Nanchang University and Beijing College of Technology，specializing in disciplines of mining and metallurgy。

CSU boasts a high quality group of faculty and staff，comprising many famous scholars and experts with great influence both at home and abroad。Among them，3 are members of the Chinese Academy of Sciences，14 are members of the Chinese Academy of Engineering，9 are members of the Discipline Assessment Group of the Academic Degrees Committee of the State Council，23 scientific and technological experts have been recognized at a national level for their outstanding achievements，532 experts have been awarded special subsidies from the government，805 are doctorate supervisors and 28 are Special-term Professors funded by Chang Jiang Scholars Program and 34 are global experts recruited by 1000 Talent Plan.In addition,CSU has appointed a number of well-know Chinese

Introduction

Organizers & Sponsors

and international scholars as honorary professors,visiting professors or adjunct professors.

CSU coversn 12 fields of education,including engineering,science,medicine,management,literature,law,economics,philosophy,education,history,agriculture and art ,and offers military science as well.It consists of 30 colleges offering 92 programs for bachelors degrees,and a graduate school comprising a number of national key disciplines,including 6 at first-level (ranking 8th in China),12 at second-level and one in development.33 first-level disciplines are authorized to confer doctoral degrees,58 first-level programs to confer master degrees and 19 programs to confer professional masters degrees.CSU also has 24 post-doctoral exchange centers,top Chinese universities and colleges.

Changsha National High-Tech Industrial Development Zone

Changsha National High-Tech Industrial Development Zone, situated in the west urban district of Changsha city, on the west shore of the Xiang River, and the north side of Yuelu Mountain Scenic Area, was founded in 1988, and it became one of China's earliest national-level high-tech industry development Zones through the State Council's approval in 1991, and was approved by the Ministry of Science & Technology in 2009, became a national innovative technology pilot zone.

In 2011, the whole zone achieved a total technological, industrial and commercial income of RMB150 billion Yuan.The Zone now has more than 800 new and high-tech enterprises, of which nearly 200 are foreign-invested,32 are domestic and foreign listed companies, and the pillar industries of electronic information, advanced manufacture, biomedicine, new materials, new energy sources, environmental protection industry and service outsourcing, etc. have been formed already; here are Zoomlion, Jiuzhitan, Mendale, Blue Cat, Longping and many other well-known trademarks famed both at home and abroad.

Luvalley Science & Technology Park

Luvalley Science & Technology Park (Luvalley for short) is the core park directly managed by the Administrative Committee of Changsha Hi-Tech Zone, with an overall planning area of 117 km2, and at present an infrastructural framework of 21 km2 of the Park has formed already. Situated in the leading area of the "two-oriented society" (resources-saving and environment-friendly) and within the comprehensive reform pilot zone of the Changsha-Zhuzhou-Xiangtan city cluster emphatically constructed by the country, it is the high and new technology industry cluster zone, the new-model industrialization demonstration zone and the model region of an ecological new town emphatically constructed by Hunan province and Changsha city, and is mainly divided into the seven major industry functional zones: the Luvalley constructed area, the information industry park, the advanced manufacture industry park, the new materials industry park, the biomedical industry park, the photovoltaic new energy resources and environmental protection industry park. The output value of the large-scale industrial enterprises in the Park accounts for 40% of the total output value of Changsha's large-scale industry. There are 16 Fortune 500 international corporations gathering in the Park: Hitachi, Schlumberger, Yuanda Suzuki, Huarun Group, Nokia, Motorola, Cisco Systems, Dell, Ericsson, Manpower, Itochu, Foxconn, Honeywell, Fuchs,Harris and Siemens.

Changsha National Bio-industry Park

Changsha National Bio-industry Park former named Liuyang Biomedical Park, was approved the foundation by Hunan Provincial Government in 1998. The first-stage planned area is 13.4 km^2.

The park is located in the eastern of the provincial capital -Changsha area, and is 35 km away from Changsha CBD, 25 km from Liuyang urban area, 18 km from Changsha Huanghua International Airport, 20 km from Beijing-Zhuhai Highway, 30 km away from Wuhan-Guangzhou skytrain. Changsha-Liuyang Highway, Daweishan-Liuyang Highway, Liuyang-Liling Highway, No.319 National Highway, Kaiyuan East Road, a freeway which linked Changsha and park are all across the park. Changsha-Zhuzhou-Xiangtan City Expressway will pass by the park and will set up a station here. The park east to Yangtze River Delta, south to Pearl River Delta, with the significant location advantage and the convenient transportation.

Changsha National Bio-industry Park is one of the first group of National Biomedical Industrial Bases, and was granted as "China Liuyang International Medicinal Industry Park" (Lipip) by UNIDO in October 2001, was granted as "Practice Base for China Youth Incubation" by Chinese Youth Communist League Center Committee in 2004, and was approved as National Biomedical Industrial Base in 2006, being the only national biomedical industrial base in the central area.

Changsha National Bio-industry Park is aiming at the high technology, the ecological and international development strategy, and guided by biomedical sciences, healthy food, bio-environmental protection, bio-energy and electronic information, which is the important area in Changsha-Zhuzhou-Xiangtan city cluster. Now there are 168 industry enterprises, 125 supporting research, service, business enterprises introduced into the park, is one of the most concentrate parks with medium-sized and small enterprises in China. Among them, there are medicine enterprises such as Jiu Zhi Tang Si Qi, Taier, Wei Er Man, Chunguang Jiuhui, Dinuo, Jiudian, Hua Na Da, Anbang, Lv Zhi Yun Co., Ltd etc; IT enterprises such as Hong Kong Lansi Technology, Lier electron Co.,Ltd etc; food enterprises such as Kang Shi Fu, Yan Jin Pu Zi, Ke De Xiang food Co.,Ltd etc. Now there got 15 Hunan famous brands, 3 China famous brand.

Changsha National Bio-industry Park carrying out close management and express working and was approved to set up a first-degree treasury by People's Bank of China, that to insure the materialized of tax refund and preferential policies.

Introduction
Organizers & Sponsors

Through the establishment of technology public service platform to promoting scientific and technological innovations and promote competence, the park formed a complete industrial chain and competitive advantage. The main platforms is: Hunan Medical Science and Technology Center (biological medicinal incubator), Hunan Experimental Animal Center (Hunan Food and Drug Security Assessment Center).

In 2011, the output value was 25.2 billion yuan, with the financial tax 0.83 billion yuan. In the last"the twelfth five years", the output value will achieved 100 billion yuan, with the financial tax 4 billion yuan. Changsha National Bio-industry Park wills effort to create the world biology economic community that makes Changsha to be biology economic center and the city of biological industry start-ups.

Cancer Research Institute of Central South University (CRI-CSU)

Founded in 1989, Cancer Research Institute of Central South University (CRI-CSU) was recognized as the earliest State Key Discipline of Pathology and pathophysiology in universities in China. The discipline was authorized to grand the Mater and Doctor Degree of Medicine in 1977 and 1981. Moreover, CRI established the State Key Discipline of Pathophysiology in 1990, the Postdoctoral Training Station of Basic Medicine in 1991, Key Laboratory of Carcinogenesis of Ministry of Public Health in 1994, Key Laboratory of Carcinogenesis and Invasion of Ministry of Education and positions for Yangze River Scholars in 2000. In 2001, it was reapproved as the earliest State Key Discipline of Pathology and pathophysiology, and was reconfirmed by the State in 2006.

CRI incorporates 6 research laboratories: Laboratory of Tumor Molecular Pathology, Laboratory of Tumor Molecular Genetics, Laboratory of Tumor Molecular Biology, Laboratory of Tumor Immunobiology, Laboratory of Tumor Cell Biology and Laboratory of Tumor Invasion and Metastasis. During the long-term scientific research and practice, a stable team of academic leader and echelon has been formed with 1 academician from Chinese Academy of Science, 9 professors, 9 associate professors, 22 lectures, 8 Ph.D supervisors, and 10 Mater instructors, therefore, 90% of its faculties hold a Ph.D degree. In addition, 2 faculties were awarded as National Outstanding Young and Middle-Aged Specialists by Ministry of Personnel, 3 as Experts with Outstanding Contributions in Science and Technology by Ministry of Health, 2 as Outstanding Chinese Doctor and Master with Contributions by State Academic Degree Committee and Ministry of Education respectively, 1 as Outstanding scientific and technological worker and 5 as New Century Excellent Talents.

Decade of relentless endeavors give CRI a firm target on the study of the etiology and pathogenesis of nasopharyngeal carcinoma, which helps a lot for the establishment of a differentiating yet interconnecting network of research fields on molecular carcinogenesis of nasopharyngeal carcinoma (NPC), tumor genomics and transcriptomics, tumor signal transduction mechanisms, tumor markers and targeted therapy, genetically engineered antibody and cancer stem cells. All these efforts promised CRI a featured advantage and a leading edge on the research of molecular carcinogenesis of nasopharyngeal carcinoma (NPC) both at home and abroad.

Since the 11th Five Year Plan of the State, research activities at CRI have been supported by a variety of interdisciplinary research grants of up to 69 million RMB from both national and international sources, including 7 National Basic Research Program of China (973), 4 High-tech Development Program of China (863), 1 National Scientific and Technological Project, 2 Key Program of Natural Science Foundation of China (NSFC), 32 program from NSFC, 2 joint funds between NFSC and Hong Kong Research Grants Council (RGC) , 1 cooperation fund between NSFC and Overseas Young Scholars , 1 program of Two Basis Program of NSFC, 2 international cooperation programs of Chinese Medical Board (CMB), and also 3 New Centry Talent Program. Furthermore, CRI have applied 15 patens, with 3 been approved already. It has also been awarded 2 first prize and 2 second prize for Science and Technology Progress by Hunan Province, and 2 second prize for Science and Technology Achievement by Ministry of Education. CRI has published over 300 papers with more than 200 in SCI, 2 academic books, and has co-edited 4 textbooks and references.

To ensure a sustainable development of the State Key discipline, CRI has paid great attention to the personnel training and talents introduction. During the 11th Five Year Plan of the State, CRI has educated 6 postdoctoral researchers, 71 Ph.D graduates, 70 Mater graduates, among whom, 2 won National Excellent Doctoral Dissertation Award, 3 were nominated for National Excellent Doctoral Dissertation Award, 8 won Provincial Excellent Mater Thesis and Doctoral Dissertation Award. At the same time, 9 talents were introduced from abroad, and another 15 well-known experts were hired as guest lectures to take part in a wide range of practices concerning the development of discipline and academic exchange.

Until now, CRI has established a first class platform for theoretical research and technological innovation on malignant tumor pathogenesis and targeted therapy during the development of State 985 and 211 Programs, as well as other major and key programs, building itself into a vital basis for basic research and application on oncology and a eye-catching cradle for high-level talents.

Institute of Clinical Pharmacology, Central South University

As the first institute fully engaged in pharmacogenetics, pharmacogenomics and personalized medicine, Institute of Clinical Pharmacology enjoys the state key discipline of

Introduction

Organizers & Sponsors

pharmacogenetics, key laboratory and engineering center of Ministry of Education of China and Hunan province, Sino-American co-build Asian Demonstrative Lab on Pharmacogenetics, as well as the Asian center of Pharmacogenetics for Every Nation Initiative (PGENI) funded by NIH and Gates Foundation. Meanwhile, it also hosts one academician of Chinese Academy of Engineering, and members of Thousand Talent Program, National Outstanding Youth Program and distinguished professors of Yangzi Scholars. Academician Hong-Hao Zhou, director of Institute of Clinical Pharmacology, is the first scientist proving the ethnic difference in drug response, as well as the initiator and founder of personalized drug treatment in China.

School of Biological Science and Technology, Central South University

The School of Biological Science and Technology, Central South University, has a long history which can be dated back to 1942 when biochemical division in the Xiangya School of Medicine was founded. Department of Biology was established in 1943, and Department of Molecular Biology was established in 1978, etc. The school was founded with 5 departments (Biochemistry, Cell biology, Genetics, Molecular Biology, Neurobiology) as strongly advocated by Prof. Jiahui Xia ,a distinguished human and medical geneticist and a member of Chinese Academy of Engineering in May, 2003.

The school currently has over 70 staff and faculty members, of which, 1 is a member of the Chinese Academy of Engineering, 1 is a Cheungkong Chair Professor, 1 is a member of the state's Outstanding Talents Project of the 21st century, 2 are Council Experts for Special Allowance; 9 are Trans-Century Training Programs Foundation for the Talents in support programs of the Ministry of Education, New Century Excellent Talents, Foundation for University Key Teacher, and Science Foundation for The Excellent Youth Scholars of Ministry of Education of China; 5 are Furong scholars of Hunan province, 121 talents engineering, and academic leaders in the university; 2 are Shenghua Distinguished Professors, Central South University. The School is one of the first Ph.D. degree programs in first-level discipline of biology. Currently it possesses national key discipline of genetics, Hunan province key discipline of biochemistry and molecular biology. Since its founding, the school has educated thousands of students, including a large number of international students and students from Hong Kong, Macau and Taiwan. It has full-time undergraduate and graduate programs, and has formed a multi-standard, multi-level pattern of school.

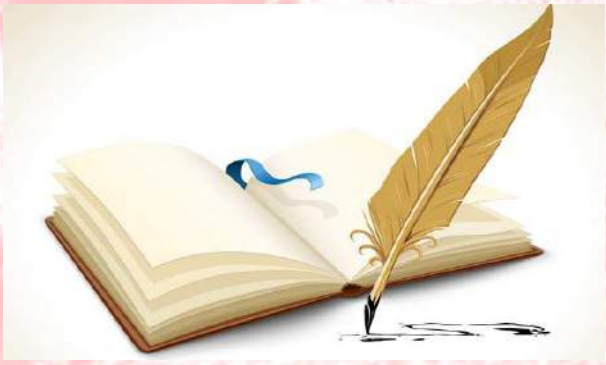
The school has been making full use of the fine tradition of rigorous scholarship of Xiangya. We are aiming to create a domestic first-class, internationally renowned school with medical background and genetic features.

Changsha University

Changsha University , founded in 1983，located in the cultural and historical city of Changsha in the central China, is a full-time school of higher learning. It consisted of 16 Departments, offering more than 30 full-time undergraduate programs grants for bachelor degree. At present, it has a total of 895 faculty members and staff, including 102 Professors, 165 associate Professors; The full-time students enrolled are over 13,000 and 4,800 part-time students. A multi-discipline network highlighted by bioengineering, applied chemistry, environmental engineering, mechanic & electron engineering, tourism, arts, industrial and commercial management and law etc. Aim of the university lays emphasis on teaching and promoting students' capacity in acquiring knowledge and adjusting with the society.

Changsha University is a garden-style university and it covers a total area of 1,326,000 square kilometers with a construction area of 350,000 square meters and clusters of modern and elegant buildings and modern teaching and researching facilities, library，sport stadium, and well-equipped student residential facilities. Changsha Universityenjoys good reputation for outstanding research facilities and high qualifying teachers and scholars with extensive research interests and profound knowledge. Currently we have four provincial key academic groups, including Biochemical &Molecular Biology, Applied Chemistry, Mechanical and Electron Engineering, and Industrial and Commercial Management and three provincial social and art research institutions.

Meanwhile, Changsha University has established extensive global links and diverse cultural communications. So far, it has formed cooperative relationship with higher education providers from over 20 countries and regions, which covers areas of North America, East Asia, Europe and Asia-Pacific. A variety of overseas organizations and communities are in wide and mutual-beneficial cooperation with the university. We are expecting more exchanges and cooperation with foreign universities and research institutions ad more international students to our university for further studies.



Ark Pharm, Inc.
Libertyville, IL USA

About Us

Ark Pharm, Inc. specializes in design and synthesis of medicinal building blocks, scaffolds and other advanced intermediates serving drug descovery research.

Our Services

- Medicinal Building Blocks and Scaffolds
- Advanced Intermediates
- Custom Synthesis and Contract Research
- Process Research and Scale-up

Shanghai R&D

- 31,500 square ft wet chemistry laboratory
- 116 employees
- Over 10,000 products in stock

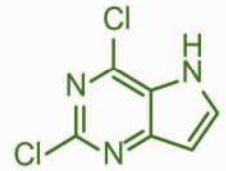
QA&QC

- ISO 9001:2008 Certified

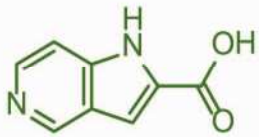
Contact Us

Ark Pharm, Inc.
1840 Industrial Drive, Suite 280
Libertyville, IL 60048 USA
Phone:847-367-3680
Fax: 847-367-3681
E-mail:sales@arkpharminc.com
Website:www.arkpharminc.com

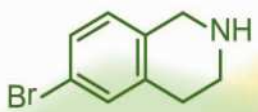
China Contact
Bepharm, Ltd.
128 Xiangyin Road, Building 12, 5F
Yangpu District, Shanghai 200433, China
Phone:+86-21-51816456
Fax: +86-21-51816457
E-mail:sales@bepharm.com
Website:www.bepharm.com



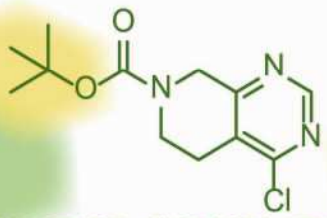
AK-25073 [63200-54-4]



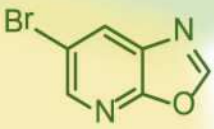
AK-49014 [800401-65-4]



AK-25184 [226942-29-6]



AK-27425 [1053656-57-7]



AK-46582 [886372-90-3]

sirius

Market leaders in automated pK_a, logP/D & solubility measurement

At Sirius Analytical we design and manufacture highly automated instruments to measure physicochemical parameters – pK_a, logP & logD, solubility and dissolution.

Fast, reliable and cost-effective instrumentation & services to address solubility challenges in preformulation, formulation & late stage development

The SiriusT3 is a complete and fully automated system for accurate measurement of ionization, lipophilicity, solubility and dissolution by pH-metric and UV methods using sub-mg quantities of material.

We also operate as a CRO providing a wide range of physical chemistry analytical services. Our services are aimed at two broad stages of the drug discovery and development process:

- Medicinal Chemistry & Hit to Lead - ADME Screening Assays
- Formulation & Development - Detailed ADME investigations & additional Solid State Services

Sirius Analytical Instruments Ltd.
sales@sirius-analytical.com
www.sirius-analytical.com

Sirius中国地区总代理商:
Tel: 010-8528 3377
info@universalhkco.com.cn
www.universalhkco.com.cn

Universal
环球（香港）科技有限公司

FINNEGAN
美国飞翰律师事务所

WASHINGTON, DC
ATLANTA, GA
CAMBRIDGE, MA
PALO ALTO, CA
RESTON, VA
BRUSSELS
SHANGHAI
TAIPEI
TOKYO

FOCUSED ON
INTELLECTUAL PROPERTY LAW
专精于知识产权法律

Innovations and discoveries in areas such as human therapeutics, bio-agriculture, diagnostic testing, and drug development have turned the promise of biotechnology into reality. Strong intellectual property protection has been essential to the advancement of the industry and remains key to its continued growth.

Finnegan has advised biotech pioneers on every aspect of IP. Let our experience assist you in developing an IP strategy for your biotechnology business.

随着人类治疗学、生态农业、诊断测试和药物开发等领域的创新与发现，生物科技的种种设想如今已变成现实。有力的知识产权保护不仅在此发展过程中起着至关重要的作用，也是生物科技未来持续发展的关键因素。

美国飞翰律师事务所为生物科技领域的多家领先企业提供全方位的知识产权法律服务。让我们的丰富经验助您一臂之力，为您的企业构建完善的知识产权战略。

Please contact Finnegan Shanghai Office:
若需要更多信息、请联系飞翰上海代表处：
Esther Lim 林艺思 *or Ningling Wang* 王宁玲 *at info@finnegan.com*
电话：*86.21.6194.2000*

IBP

上海药谷嘉兴国际生物科技园
SPV Jiaxing International Bio-tech Park

上海药谷嘉兴国际生物科技园　生物医药企业的沃土

——长三角腹地，离上海、杭州、苏州均一小时车程
——水源保护地和湿地公园，环境友好型国家园林城市
——标准厂房租金：10-15元/每平方米/每月
——办公楼租金：30元/每平方米/每月
——生产用地价格：20万元/每亩起
——协助拥有自主知识产权企业申请政府奖励基金100-300万元

垂询电话：0573-82287555 转 902229 或 902227　　园区网址：www.ibp-china.cn

主办、承办、协办及支持单位

主办单位

2012年中国（长沙）科技成果转化交易会 (STATF)

中国（长沙）科技成果转化交易会由科技部、教育部、中国科学院和湖南省主办，是国家宏观布局中部，实现中部崛起和快速发展，致力于科技成果转化与交易，促进资源整合，实现高新技术产业化的公共平台。自2007年以来，科交会已连续成功举办五届，现已成为继北京科博会、深圳高交会之后的国内第三大科技类会展品牌。

承办单位

长沙市

长沙市是湖南省省会，位于中国中南部，长江分支湘江的下游，是中国经济最发达的前二十个城市之一。长沙是历史文化名城，长沙市政府是本次科交会的承办单位。

中南大学

中南大学位于湖南省长沙市，现为教育部直属国家重点综合性大学，是首批进入国家“211工程”重点建设的高校，也是国家“985工程”部省重点共建的高水平大学。按照多个排名榜，中南大学在全国2000所高校中位于前15至20名。中南大学是由原中南工业大学、湖南医科大学、长沙铁道学院三校合并而成的。

药源

药源（www.yypharm.org）是美国联邦税务局批准的免税公益性组织。药源总部设于美国芝加哥，聘有五十余位包括来自雅培、辉瑞、施贵宝、阿斯利康、默克、芝加哥大学、埃默里大学、德克萨斯大学等生物及制药领域颇有建树的领军人物或高级管理人才为顾问，注册会员逾两千人，遍布世界各地，是全球最有潜力的，受美国伊利诺伊州政府重点扶持的非盈利组织。协会自成立以来已经为推动美中在生物制药领域的国际合作做了大量工作。

协办单位

长沙高新技术开发区

长沙生物技术产业基地

支持单位

中南大学肿瘤研究所

中南大学临床药理研究所

中南大学药学院

中南大学生物技术学院

化学生物传感与计量国家重点实验室（湖南大学）

长沙学院

上海药谷嘉兴国际生物科技园

旅美华人科学家工程师专业人士协会

开幕致辞

金秋十月，2012中国（长沙）科技成果转化交易会将在美丽的历史文化名城长沙拉开帷幕。本次盛会突出科技与文化融合，科技与金融融合，科技与产业融合，搭建国际高端人才与成果转化的对接平台。在长沙市人民政府的大力支持下，2012“新药创制与生物医药产业发展”第四届药源国际研讨会作为本次科交会的重要卫星会议也将如期举行。我们热忱地欢迎来自海内外著名制药企业代表、著名大学及科研院所专家学者以及美国伊利洛伊州的政府官员，大家共同探讨在生物医药蓬勃发展的今天，如何携手形成政府/企业/高校/科研院所的合力，提升药物研发的原创能力，推动新药创制前沿技术的应用，结成优势互补的战略合作伙伴，实现共赢的未来目标。为此，我们感谢各位远道而来莅临此次盛会的朋友们，感谢2012中国（长沙）科交会组委会和长沙市人民政府以及中南大学给予的支持，感谢长沙市高新技术开发区、浏阳国家生物产业基地以及中国嘉兴生物科技园和中国旅美科学家及工程师协会的鼎力支持。

湖南人杰地灵，风光秀美，在“中部崛起”、“环境友好型，资源节约型”两型社会建设的良好机遇中正在彰显出巨大的优势与潜力。我们相信通过这次会议您将结识生物医药领域新的朋友，您将获得非常丰富的科技信息，同时您还将发现新的合作契机。

让我们相约湖南长沙，共同努力，将第四届药源国际研讨会办成精彩的盛会！

祝愿第四届药源国际研讨会圆满成功！

曹亚教授
中南大学肿瘤研究所副所长

朱贵东博士
药源会长

第四届药源生物制药国际研讨会兼主席

长沙市人民政府领导致辞

尊敬的湖南省侨联曹亚主席、中南大学周科朝校长，美中药源（Yao Yuan-Academy for Pharma Innovation）朱贵东会长、各位来宾，各位朋友:

十一月的长沙，丹桂余香。作为2012中国（长沙）科技成果转化交易会的重要专场——第四届药源国际研讨会今天在美丽的长沙隆重开幕了！在此，我谨代表中共长沙市委，市人民政府对会议的召开表示衷心的祝贺！对各位来宾的到来表示热烈的欢迎！

湖南是中国中部的重要省份，长沙作为湖南省会，有近700万人口。近年来，在中共长沙市委、市政府的领导下，在社会各位的关心与支持下，长沙的经济、社会快速发展，综合实力已名列中国城市七强。随着“中部崛起”战略的深化和“长株潭一体化”（长沙/株洲/湘潭）进程的推进，长沙在全国生物医药产业的集群化进程中，发展速度引人注目，生物医药已成为我市重要的新型产业，以长沙市高新技术产业开发区和长沙国家生物产业基地为代表，聚集了大批生物医药企业；在我市实施的引进海外人才计划中，就有多个在生物医药领域的优秀创新团队。按照国家大生物产业发展计划，今后几年是我国生物医药发展的关键时期。长沙将抓住这一发展机遇，加快发展生物医药等国家战略性新兴产业，提高长沙的核心竞争力。

科技进步与人民生活紧密相关，加快科技成果转化是政府的职责所在。迄今为止，长沙科技成果转化交易会已经成功举办了5届，科交会已成为科技成果转化的新平台。在本次会议上，美国药源将与长沙高新区以及长沙国家生物产业基地签署战略合作框架协议。以“新药创制与生物医药产业发展—政府、企业、高校以及科研院所的合力”为切入点，我希望通过本次会议能更好地促进中美在生物医药领域的交流与合作，形成政府、企业、高校和科研院所的共同力量，加强我市生物制药信息、技术和成果与海内外的转化与对接，推进我国生物医药产业的发展。

最后，预祝第四届药源国际研讨会圆满成功，各位领导、来宾，身体健康，合家欢乐！

谢谢大家！

夏建平
长沙市人民政府副市长

中南大学领导致辞

尊敬的各位领导、各位嘉宾、各位代表:

由长沙科技成果转化交易会组委会主办、中南大学和美中药源承办的第四届药源国际研讨会今天在美丽的星城长沙隆重召开，在此，请允许我代表中南大学向出席本次盛会的中外专家和学者以及生物制药企业的精英们表示热烈的欢迎！向为本次大会提供大力支持和付出辛勤劳动的各单位、各部门表示诚挚的谢意！

中南大学是教育部直属全国重点大学，是首批进入国家“211工程”重点建设的高校，是国家“985工程”部省重点共建的高水平大学。近年来学校各项事业快速发展，我校的两院院士数、国家重点学科数、国家科技奖获奖数、国家教学名师数、国家精品课程数、全国优秀博士论文数等重要办学指标均居全国高校前列。学校还拥有以“南湘雅、北协和”享誉中外的湘雅医院等3家设备先进、水平一流的“三级甲等”附属医院。传承医学百年严谨治学的传统，在湘雅药学学科的基础上，中南大学2002年组建了药学院，目前已经形成了药物化学、天然药物学、心血管药理学、遗传药理学以及药剂学五个学科方向。涵盖药物研发到使用的各个环节，各个方向相互支持形成了明显的学科优势。2009年由教育部学位中心进行评估，该学科排名全国药学学科第七名。我校注重药学领域产学研结合模式的布局，希望借助这次盛会，推动中南大学新医药产业领域发展。

新药研发需要全新的思维，充分利用全球技术信息和智力资源，形成有效合力，是成功的关键。美中药源已经和多所大学，技术中心，和大批制药界科学家建立了合作关系。我相信，本次会议将为同仁间切磋技艺，百家争鸣提供广泛交流的平台；通过多层次的交流活动，使国际同仁能更全面了解我国及我省新药研发事业的快速发展；本次会议将携手企业为支持药物研发事业的企业界朋友营造与药源组织合作、共赢的空间。同时将促进政府致力于科技成果转化与交易，促进资源整合，进一步完善高新技术产业化的公共平台；为制药企业提供资讯、技术、人才、产品和商机；启发高校科研人员获取新药研发的思路；真正做到政府、企业、高校以及科研院所的合力。

长沙是一座拥有悠久文化历史的名城，风光秀美，名人文士辈出，在这丰硕的金秋我们齐聚长沙，希望各位嘉宾交流新药创制的经验，分享成果，共议发展，感受极具特色的湖湘风情。最后，祝第四届药源国际研讨会圆满成功！

祝各位领导和来宾身体健康、工作顺利！

谢谢大家！

周科朝教授
中南大学副校长

第四届药源国际研讨会

2012年“新药创制与生物医药产业发展”—政府、企业、高校以及科研院所的合力

中国长沙
2012年11月10-16日

会议日程

2012年11月10日

上午8:00 —下午9:00　　全天注册（世纪金源大饭店大厅）
下午6:00 —晚上8:30　　晚餐

2012年11月11日

第一单元：新药研发的挑战、发展战略和契机
地点：世纪金源大饭店　三楼　国际会议厅
主持人：**曹亚**教授，中南大学肿瘤研究所副所长

上午9:00 — 上午10:00　第四届药源生物及制药国际研讨会开幕式
领导致辞、签约仪式及合影
上午10:00 —上午10:20　茶歇

主持人：**魏于全**教授，中国科学院院士、四川大学副校长（30分钟发言，5分钟提问）
上午10:20 — 上午10:55　个体化医学的实施与展望
周宏灏教授，中国工程院院士、中南大学临床药理研究所所长
上午10:55 —下午11:30　单克隆抗体和生物药的研发
P. Mark Hogarth博士，澳大利亚Burnet 研究所所长、皇家科学院院士
上午11:30 — 下午12:05　靶向DNA及新药研发
Hiroshi Sugiyama博士，日本京都大学杰出教授
上午12:05 — 下午12:15　主持人给演讲嘉宾颁发证书
下午12:15 —下午2:00　午餐

第二单元A: 技术平台对接与成果转化（配对服务、产品展厅、成果墙报、职业推介）
地点：世纪金源大饭店（下午2:00-6:00，世纪金源大饭店三楼合肥厅）
*随后两天的配对服务、产品展厅和职业推介在世纪金源大酒店继续进行。
第二单元B：转化医学以及成功研发案例分析
地点：世纪金源大饭店　三楼　国家会议厅
主持人：**Brian S. Blagg**博士，美国堪萨斯大学药学院教授、JMC高级编委（30分钟发言，5分钟提问）

下午2:00 – 下午2:35 核受体靶点与药物开发
张晓坤教授，厦门大学药学院院长 、美国Sanford-Burnham医学研究所教授
下午2:35 – 下午3:10 靶向肿瘤微环境研究的问题、策略和前景
Giovanni Melillo博士，美国施贵宝制药公司肿瘤部临床总监、美国癌症研究院前肿瘤缺氧研究室主任
下午3:10 — 下午3:20 主持人给演讲嘉宾颁发证书
下午3:20 — 下午3:40 茶歇

主持人：**Paul Mar**博士，美国 SynChem, Inc.董事长兼CEO（30分钟发言，5分钟提问）
下午3:40 — 下午4:15 抗肿瘤抗体生物药：从早期研发到注册上市
Peter Senter博士，美国西雅图遗传制药公司副总裁
下午4:15 — 下午4:50 新型抗寄生虫类药物Oxaboroles
Thomas von Geldern博士，美国Embedded咨询公司总裁、美国雅培集团前Research Fellow
下午4:50 — 下午5:00 主持人给演讲嘉宾颁发证书
下午6:30 — 晚上8:30 晚餐

2012年11月12日

第三单元：全球新药研发的策略和亮点

地点：世纪金源大饭店 三楼 国际会议厅 （30分钟发言，5分钟提问）
主持人：谭蔚泓教授，湖南大学生物学院院长，化学生物传感与计量学国家重点实验室主任

上午8:30 – 上午9:05 以Methylnaltrexone为范例浅谈美国新药开发
Chun-Su Yuan博士，美国芝加哥大学Cyrus Tang讲席教授、Tang植物药研究所所长
上午9:05 — 上午9:40 糖疫苗预防和治疗感染类疾病
Peter H. Seeberger教授，德国马普有机/物化/高分子所所长、德国柏林大学/美国Burnham研究所教授、瑞士科学院前院长
上午9:40 — 上午9:50 主持人给演讲嘉宾颁发证书
上午9:50 — 上午10:10 茶歇

主持人：戴立忠博士，圣湘生物（Sansure Biotech ）董事长（30分钟发言，5分钟提问）

上午10:10 — 下午10:45 中国聚焦医药创新
蒋华良教授，中国科学院上海药物所副所长、华东理工大学药学院院长
上午10:45 — 上午11:20 中国特有植物活性代谢物与新药研发
刘吉开教授，中国科学院昆明植物研究所副所长
上午11:20 — 上午11:55 亚型选择性热休克蛋白90
Brian S. Blagg博士，美国堪萨斯大学药学院教授、JMC高级编委
上午11:55 — 下午12:05 主持人给演讲嘉宾颁发证书
下午12:05 — 下午2:00 午餐

第四单元：新药创制与生物医药产业发展高峰论坛—政府/企业/高校/科研院所的合力

地点：世纪金源大饭店　三楼　国际会议厅

下午2:00 — 下午2:30　主讲报告标题：转化医学和高校-企业的项目对接
Chun-Su Yuan博士，美国芝加哥大学Cyrus Tang讲席教授、Tang植物药研究所所长

下午2:30 — 下午3:10　峰会讨论主题：探讨政府/企业/高校/科研院所对新药研发的合力
论坛主持人：**Tony Giordano**博士， TheraVasc制药公司CEO

下午3:10 — 下午3:30　茶歇

下午3:30 — 下午4:00　主讲报告标题：待定
国家食品药品监管局领导

下午4:00 — 下午4:30　峰会讨论主题：创新药临床实验注册的特殊审批程序
论坛主持人：刘春光，北京康利华咨询有限公司总经理

下午4:30 — 下午4:40　主持人给演讲嘉宾颁发证书

下午4:40 — 下午5:10　主讲报告标题：连续化学的应用
Peter H. Seeberger教授，德国马普有机/物化/高分子所所长、德国柏林大学/美国Burnham研究所教授、瑞士科学院前院长

下午5:10 — 下午5:50　峰会讨论主题：如何提高原料药的生产效率
论坛主持人：**Thomas von Geldern**博士，美国von Geldern咨询公司总裁

下午6:30 — 晚上8:30　晚餐

2012年11月13日

第五单元：药业动态、旧药新用和知识产权保护

地点：世纪金源大酒店　三楼　国家会议厅

主持人：**孙仑泉教授，**中南大学分子医学中心主任　（30分钟发言，5分钟提问）

上午8:30 - 上午9::05　为创新型医药生物公司最大化专利价值
王宁玲，美国Finnegan, Henderson, Farabow, Garrett & Dunner公司

上午9:05 — 上午9:40　在幼猪和成年猪中开展药物动力学研究：其PK参数是否与人相似？
Gregory T. Knipp教授，美国普渡大学印第安纳转化医学研究所所长

上午9:40 — 上午10:15　旧药开发新适应症
Tony Giordano博士，美国TheraVasc制药公司CEO

上午10:15 — 上午10:25　主持人给演讲嘉宾颁发证书

上午10:25 — 上午10:45　茶歇

主持人：**Gregory T. Knipp**教授，美国普渡大学印第安纳转化医学研究所所长

上午10:45 — 上午11:20　核酸类药物在抗肿瘤和抗病毒中的应用
孙仑泉教授，澳大利亚悉尼科技大学分子和医学生物科学系教授、中南大学分子医学中心主任

上午11:20 — 上午11:55　核酸适配体与新药研发
谭蔚泓教授，湖南大学生物学院院长、化学生物传感与计量学国家重点实验室(湖南大学)主任

上午11:55 — 下午12:05　主持人给演讲嘉宾颁发证书

下午12:05 — 下午12:35　闭幕式
曹亚教授，中南大学肿瘤研究所副所长

下午12:35 — 下午2:00　午餐

Biography

演讲嘉宾介绍（按字母顺序）

Brian S. J. BLAGG

Blagg教授出生于美国加州，1994年在Sonoma州立大学获得化学和环境研究的双学士学位。之后，他加入美国犹他大学，师从Dale Poulter教授攻读博士学位，主要研究鲨稀合成酶催化合成叔环丙基甲基阳离子的分子机理。1999年，Brian进入美国著名的Scripps研究所在Dale Boger实验室做博士后研究，研究喜树碱的合成和分子内Diels-Alder反应并用于合成长春碱和其他天然产物。

2002年，Blagg博士受聘Kansa大学药物化学系任助理教授，主要研究小分子化合物对调节Hsp90蛋白分子机制的作用。Blagg博士分别于2007年和2010年晋升为副教授（终身）和教授。他研究小组的重大贡献包括根赤壳菌素和格尔德霉素嵌合分子的鉴定，与相应的苯醌类似物相比，氢醌类药物具有更好的抑制Hsp90折叠的作用。另外他利用这种嵌合的分类方法设计了第一个选择性Hsp90抑制剂。此外他还继续研究Hsp90 C端抑制剂，这种抑制剂能够抑制有利于生存的热休克反应和分子伴侣介导的蛋白折叠，从而产生两种全新类型的Hsp90调节剂，具有用于神经组织退化型疾病及癌症的治疗潜能。这些研究使Blagg研究组多次获奖，包括2009年药物化学领域的美国化学学会戴维·罗伯森奖等，此外Blagg教授还在多个医药化学杂志编辑部委员会任职，现任药物化学杂志的高级编辑。

Tony Giordano

Tony Giordano博士现任TheraVasc公司的董事长兼CEO。Giordano博士长期在生物技术公司担任高级管理职务，先后在五个公司任总裁或副总裁。他首先提出与制药公司的合作，获得了几个商业和非盈利基金支持，并且先后参与了五个临床开发阶段的项目。另外，他还在什里夫波特的路易斯安那州立大学健康科学中心的研究与业务发展中任副院长，在这里工作的五年时间里，他谈成了18个项目转让合同。

在他工作两年的路易斯安那州，他被领导指定为创新委员会的一员。在俄亥俄州获得哲学博士以后，他进入美国国家卫生研究所进行学习，然后在Abbott实验室作为一个高级科学家开始他工业方面的职业生涯。他还在三家风险企业担任顾问，并且在Case Western Reserve大学兼任助理教授，教授生物企业家职业能力相关的一门课程。

P. Mark HOGARTH

Mark Hogarth教授是澳大利亚国家健康和医疗研究委员会（NHMRC）的首席研究员，此前主管奥斯丁研究所，现负责伯内特战略研究所。他也是墨尔本大学和蒙纳士大学的教授。

Hogarth教授领导感染和炎性癌症实验室，对与免疫相关的主要基因和蛋白的生化过程进行了广泛研究。他在健康和疾病方面发表了150多篇有关细胞表面分子研究的论文，其中包括人CD抗原和鼠LY抗原的研究。特别令人感兴趣的是免疫球蛋白Fc受体在免疫复合物中诱发的炎性反应和它在自身免疫病，过敏及癌症治疗中的应用。Fc受体因其促炎活性具有重大的现实意义，且对抗肿瘤单克隆抗体的治疗有至关重要的作用。

Hogarth教授研致力于研究这些受体的结构和生物学功能及分子遗传学，首次报道了Fc受体和抗体在健康与疾病中是如何相互作用的，以及这种相互作用是怎样被调控以便用于新治疗方法的发展。

Hogarth教授的研究推动了自身免疫性疾病潜在的生物和化学治疗的发展方向，如类风湿性关节炎。这也加深了我们对治疗性抗体如何介导抗肿瘤反应的认识。他曾指导过生物技术和制药公司的产品开发，且在转化研究方面有着丰富的经验。他曾担任多个国有和私营企业的董事会职务，负责生物医学研究的商业化，尤其是癌症，炎症和传染病。

Biography
演讲嘉宾介绍（按字母顺序）

Bob HUMPHRIES

Bob Humphries于1979年毕业于英国布拉德福德大学并获得药理学理学（荣誉）学位，随后开始了其制药界32年的职业生涯。Bob先后在Fisons、Astra和阿斯利康工作并担任从研究员、课题组长以及多功能部门经理等职务。Bob及其研发团队曾发明作为P2Y12受体拮抗剂的抗血栓形成新药BRILINTA和坎格雷洛。因为此卓越贡献，Bob在2010年获得阿斯利康CEO奖。并被评为2009年度最杰出研发人员。BRILINTA继续成为挽救病人生命的一种重要医疗手段。

Bob领导的阿斯利康团队自2006年开始从事支气管扩张剂和GR激动剂项目的早期研发。2011年3月Bob晋升为阿斯利康瑞典Mölndal部副总裁，负责呼吸和炎症类创新药的开发。在此期间，Bob除了保证各个项目的顺利进展以外，还负责制定从标靶论证到战略性发展计划。

自2012年4月离开阿斯利康以来，Bob成立VisionRealisation咨询公司，以远见、恒心和能量为核心，意在帮助其他项目团队把想法变为切实可行的计划和潜在商业机会，改善患者的生活。

蒋华良

蒋华良教授现任中国科学院上海药物研究所研究员、博士生导师、副所长。

蒋教授主要从事药学基础研究，是我国药学领域有影响的学科带头人之一。他应用生物学、化学、数理科学和计算科学等多种学科交叉的方法和技术，开展药物设计、药物靶标结构-功能关系、药物新靶标发现等研究。他发展了药物设计、靶标发现、蛋白质相互作用网络预测和分子模拟新方法，取得了多项突破和重要进展；他针对多个重要靶标发现了一系列先导化合物。在国际学术刊物上发表论文200余篇，任国际著名药学杂志J. Med. Chem.亚洲编辑和其他5个

Gregory T. KNIPP

Greg于1988年毕业于罗斯格大学，并在库克学院获得生物化学理学学士学位。然后于1986-1991年在百时美施贵宝公司的物理药学部门（Physical Pharmacy Department of Bristol-Myers Squibb）任助理研究员。1991-1997年间，在美国堪萨斯大学博尔夏特·罗纳德教授（Dr. Ronald Borchardt）的指导下，获得药物化学硕士和博士学位。于1997-1999 年，在堪萨斯大学，分子和综合生理学系，苏亚雷斯·迈克尔·J博士（Dr. Michael J. Soares）的医学中心实验室进行博士后研究。1999，他加入了罗格斯（Rutgers University）大学，在欧内斯特马里奥药学院（Ernest Mario School of Pharmacy），担任药学系助理教授，一直到2005年12月。2006年1月，他把他的实验室迁到美国普渡大学工业和物理药剂学系，任副教授。目前，他还担任了Dane O. Kildsig Center的制药工艺研究副主任和Purdue Translational Pharmacology CTSI Core Facility主席。他目前研究人肠道寡肽转运的分子和功能特性，外源性物质对胎盘脂肪酸内稳态和胎儿发育的影响，以及剂量效应对猪模型中临床相关表征的影响。他合作撰写了55篇多论文，是国际知名科学家。

刘吉开

刘吉开教授1988年获兰州大学理学博士学位。 随后在中山大学化学系从事教学和科研工作，任讲师、副教授和教授。1992-1994：获德国洪堡研究奖学金在德国萨尔大学药物研究所从事博士后研究工作；1996-1997：在德国拜耳公司（Bayer AG）药物研究中心作为高级研究员任职；1998-至今：任中国科学院昆明植物研究所植物化学与西部植物资源持续利用国家重点实验室研究员、博士生导师。现任中国科学院昆明植物研究所副所长、植物化学与西

Biography

演讲嘉宾介绍（按字母顺序）

部植物资源持续利用国家重点实验室主任。

刘教授主要从事高等真菌化学成分及其生物活性的研究。已发表SCI收录论文200余篇。申请国内外专利10项（已获授权专利7项，国际PCT公开2项）。出版专著《高等真菌化学》一部。

1995年入选中国科学院“百人计划”，国家“百千万工程”（一层次），1998年获国务院颁发的政府特殊津贴，2002年获得国家杰出青年基金。2008年作为“973”首席科学家承担“973”项目。曾获2003年度国家自然科学二等奖、2002年CAS-Bayer奖、2007年云南省自然科学一等奖。他现担任国际期刊*Nat. Prod. & Bio-prospect.* 主编，*J. Chem. Ecol.*等4个国际期刊的编委，以及国内多种期刊编委。

Giovanni MELILLO

Melillo博士于1981至1984年在意大利那不勒斯大学获得了肿瘤内科学博士学位。随后，他于1991年以访问科学家的身份加入了美国国家癌症研究所的弗雷德里克免疫学实验室。1999年，梅利洛博士作为高级研究员参与了美国国家癌症研究所弗雷德里克实验室的发展治疗计划，并促成了转录因子低氧诱导因子1的药物研发计划的实施。梅利洛博士在美国国家癌症研究任职期间曾参与开发靶向低氧信号转导通路的新的治疗策略，以及分子靶向药物在癌症患者中进行I期临床试验的设计和实施。2011至今，梅利洛博士是Bristol-Myers Squibb公司的发现医学肿瘤学部总监，负责癌症新药的开发研究。梅利洛博士是Molecular Medicine和Cancer Research 的副主编，也是Molecular Cancer Therapeutics, Cell Cycle, Molecular Cancer 和 Cell Death and Disease等杂志的编委会成员。

Peter H. SEEBERGER

Peter H. Seeberger教授曾在德国和美国学习化学、生物化学。在纽约的Sloan-Kettering癌症研究中心学习并获得博士学位之后，他在MIT建立了独立研究项目，并在四年之后晋升为Firmenich化学系副教授。六年后Peter H. Seeberger受聘为瑞士苏黎世联邦理工学院（ETH）教授，并成为德国Max Planck 胶体与界面研究所主管和柏林自由大学教授。此外，他还是Sanford-Burnham医学研究机构（La Jolla, USA）的兼职教授，及波兹坦大学的荣誉教授。

Seeberger教授在碳水化合物的生物化学研究、连续流动化学和自动化学研究、碳水化合物疫苗研究，以及工程免疫学研究领域取得了重要成就，发表了300多篇权威的期刊论文、150多篇摘要，撰写了两本专著，获得了20多项专利，参加了590多场特邀讲座。他的工作得到了同行的认定并获得了25项国际奖项，如美国Arthur C. Cope青年学者奖、Isbell奖，德国Körber奖，荷兰Havinga勋章，以色列化学协会终生荣誉成员，以及瑞士百名影响人物等。

Peter H. Seeberger为科学做出了多方面贡献。他现任Beilstein有机化学杂志的主编，曾担任过碳水化合物化学杂志的编辑，并在其他众多期刊的编委会任职。

Peter Seeberger在被忽视疾病的研究使他参与了慈善事业。他是Tesfa-Ilg “Hope for Africa”基金会的共同创始人，基金会致力于提升埃塞俄比亚的卫生保健，最近协助建立了bed-net 公司。

Seeberger实验室的研究带动了美国、德国一些公司的建立。

Peter SENTER

Peter Senter于1998年8月加入Seattle Genetics公司，并从2002年9月起担任主管化学的副总裁。2009年2月，Dr. Senter被评为公司的杰出研究员，是首次获得此项殊荣的员工。他领导的Seattle Genetics化学部，开展了抗体-药物联结技术的研究，包括对潜在药物载体、新型联结系统、联结途径和机制的研究。在加入公司之前，Dr. Senter曾在Cytokine Networks公司、Bristol-Myers Squibb制药研究机构和哈弗医学院的Dana-Farber癌症研究中心工作过。

Biography
演讲嘉宾介绍（按字母顺序）

Dr. Senter在伊利诺斯州大学化学系获得博士学位（Ph.D），在加州大学生物化学系获得A.B.。此外，他是生物共轭化学的资深编辑，以及华盛顿大学生物工程系的兼职教授。他的研究方向主要集中在医学给药、蛋白质的化学和生化性质、抗癌药物研发方面。Dr. Senter已编写和发表125多部科学出版物，获得40多项专利。

Hiroshi SUGIYAMA

杉山弘博士现任京都大学化学系杰出教授及整合细胞与材料研究所首席研究员。他分别于1979年和1984年在京都大学获学士及博士学位，并在弗吉尼亚大学完成博士后训练。此后，杉山弘博士任京都大学助理教授及副教授并于1996年受聘东京医科齿科大学正教授。2003年，他受邀回到母校京都大学任现职。杉山弘教授是世界著名化学家，现任《美国化学会志》，美国《药物化学杂志》，欧洲《化学·生物·化学》和《核酸杂志》顾问编委，《化学记录》编委，《生物材料科学》副主编。杉山弘教授长期从事核酸的化学与生物学研究，探索基于核酸的分子识别，反应性及结构的化学规律。他所领导的研究组是目前对核酸研究最为深入与广泛的小组。他的长期目标是创造能靶向分化细胞及治疗人类疾病的基因开关。

孙仑泉

孙仑泉博士现任中南大学湘雅医院杰出教授。1988澳大利亚国立大学/第四军医大学博士。中南大学分子医学研究中心主任，教育部癌变与侵袭重点实验室学术委员会委员、中南大学分子影像研究中心学术委员会主任、澳大利亚科技学会生物医学部主任。自1989起，先后就职于澳大利亚悉尼大学医学研究所（高级研究员），澳大利亚强生分子医学研究所（首席科学家）；澳大利亚悉尼科技大学分子和医学生物科学系（教授）。于2009年作为高层次人才由中南大学引进，主持分子医学研究中心工作。孙仑泉教授为中国侨联首届专家委员会委员，国家自然科学基金评审专家、教育部长江学者海外评委、国家科技进步奖评审委员。主要研究领域包括：催化性核酸的基础与临床应用研究； 肿瘤的信号转导；致瘤病毒与宿主的相互作用；。

孙教授长期从事靶向基因治疗研究，在应用催化性核酸技术关闭致病基因及其作用机制的研究方面处于世界前沿。其领导的研究团队首次在国际上进行了艾滋病干细胞基因治疗的临床前研究和I期、II期临床试验。孙教授在本领域研究中进行了大量原创性的研究，在本学科领域取得了突破性进展，申请获得多项发明专利，在Nature Medicine, Nature Biotechnol, PNAS, JNCI, J Biol Chem, Human Gene Ther等国际一流刊物上发表论文60 余篇，并编写专著12部。先后获得数项研究基金，获得J&J全球科学成就奖、中科院王宽成基金奖。

谭蔚泓

谭蔚泓，1993年获得美国密歇根大学物理化学博士学位。1996年起任美国佛罗里达大学化学系教授，佛罗里达大学基金会教授，佛罗里达大学V. T. and Louis Jackson主任教授和佛罗里达大学杰出教授。 他同时是佛罗里达大学生物纳米学中心副主任，医学院癌症中心教授和大脑研究所研究员。2000年度“国家杰出青年基金（B）”获得者，2001年入选长江学者特聘教授，2005年入选“中科院海外知名学者”，2007年被聘请为湖南大学“985工程”二期化学生物创新平台分子识别研究方向首席科学家， 2009年入

Biography

演讲嘉宾介绍（按字母顺序）

选国家“千人计划”，任湖南大学教授、化学生物传感与计量学国家重点实验室主任，生物学院院长。

谭蔚泓教授的主要研究方向是生物分析化学、化学生物学、纳米生物技术和生物医学工程。 他的小组在这些研究领域取得了一系列国际一流的研究成果，做出了重要贡献。谭蔚泓教授具有较强的科研团队组织和管理水平，先后主持国家重大科学研究计划、科技部国家重大仪器设备开发专项、国家自然科学基金委创新群体学术带头人，国家自然科学基金国际合作重点项目、国家自然科学基金重点项目、美国国家科学基金、美国国防部基金、美国国家卫生研究院基金等重要课题50多项。2010年，他主持的“基于核酸适配体的蛋白质研究新技术和新方法”项目获国家重大科学研究计划；2012年领衔湖南大学化学生物研究团队获得了国家基金委创新研究群体项目资助，实现了湖南大学自然科学基金委创新团队零的突破。他是研究成果曾20多次获奖，如1997年度贝克曼基金会杰出青年奖，2004年“匹兹堡分析化学和光谱学成就奖”，2011年教育部自然科学一等奖，2011年黄智勇优秀教师奖及2012年美国化学会佛罗里达杰出贡献奖等。在Science、PNAS、Account of Chemical Research、JACS、 Angewandte Chemie International Edition和Nature系列等国际知名学术刊物上发表学术论文350余篇，H-index 68，引用16，000多次。

Tom von GELDERN

Tom von Geldern的研究方向是医用化学和新药研究策略。他自2007年起担任药学系和生物技术公司的独立顾问。在此之前，Dr. von Geldern致力于制药工业近20年，最近成为Abbott Laboratories公司的资深研究员和高级课题主管。他获得的医用化学成果可应用于肿瘤学、炎症、心血管和代谢疾病中临床候选药物的鉴定。Dr. von Geldern发表了80多篇经同行认定的论文，获得48项US专利，受邀参加50多场演讲。

Dr. von Geldern获得了MIT的化学、数学和生物学的S.B.（理工科学士学位），在加州大学化学系取得了博士学位，随后在斯坦福大学完成了博士后研究。

Ningling WANG

王宁玲律师的业务涉及专利申办、出具法律意见、尽职调查、客户咨询、许可及专利诉讼，主要领域包括化学、化工、制药、医疗设备、半导体材料以及纳米技术。她在为跨国公司及中国公司提供知识产权组合管理法律意见以及开展尽职调查方面拥有丰富的经验。王律师代理过多起美国国际贸易委员会（U.S. International Trade Commission，ITC）和美国地区法院的案件。王律师经常在中国及国际会议和研讨会上就专利相关议题进行演讲。她曾在中国人民大学法学院为研究生教授一门关于美国知识产权法的课程并在上海交通大学凯原法学院为研究生讲授美国知识产权法并主持专利模拟法庭。她还担任中国科学技术大学法律课程项目教授。除此之外，王律师还是国际许可贸易工作者协会亚太委员会副主席、上海美国商会知识产权委员会兼主席以及中国国际许可贸易工作者协会理事。

重要经历

- 为数家跨国和中国公司开展尽职调查。
- 为多家跨国和中国公司提供知识产权组合管理代理服务。
- 代理美国一家大型制药公司简略新药申请（Abbreviated New Drug Application，ANDA）的专利诉讼案件。
- 2000年，担任俄勒冈州联邦地方法院Ann Aiken法官的法务助理。
- 2000年至2001年，担任*Oregon Law Review*杂志执行编辑。
- 1994年至1995年，任职于中国北京柳沈律师事务所；1998年，任职于美国基因泰克公司。

职业奖项

- 法相庄严荣誉会员

Chun-Su YUAN

袁钧苏，医学博士，哲学博士，现任芝加哥大学普利兹克医学院的教授，也是芝加哥大学中草药研究中心的主任。

1980年，袁博士到美国并进入亚利桑那大学开始其哲学博士学位的项目。1983年，通过了美国医学委员会考试，

Biography
演讲嘉宾介绍（按字母顺序）

并在美国开始其医疗工作。

自1994年以来，袁博士一直在芝加哥大学进行新药开发的临床试验，其团队主要为针对阿片类药物肠道功能紊乱开发的一种新型复合物，甲基纳曲酮（MTNX）开展临床前和临床早期研究。2001年，芝加哥大学将MTNX的专利转让给普罗杰尼克公司。2005年，普罗杰尼克和惠氏制药公司投入3.65亿美元联合开发针对阿片类药物诱导的副作用的药物MTNX。2008年，美国食品药品管理局批准了甲基纳曲酮药物。到2011年为止，该药物由柳树制药公司推向市场，并被批准用于全球50多个国家。该药物的额外适应症和制剂正在进一步的开发研究。袁博士也成为了许多制药公司、律师事务所以及美国政府机构的医师顾问。

此外，自1997年以来，袁博士在中草药领域的研究也作出了相当大的贡献。在芝加哥大学中草药研究中心，袁博士发表了与中草药和新药发现/开发有关的许多论文及一些书籍。袁博士在美国最古老的综合和补充医学杂志，《美国中药》中担当主编的职务。

张晓坤

张晓坤博士、教授，博士生导师，厦门大学药学院院长，厦门大学生物医学研究院院长，教育部长江学者讲座教授，中组部第一批“千人计划”特聘教授，福建省引进高层次创业创新人才，兼任美国加利福尼亚州Sanford-Burnham医学研究所教授。张晓坤教授1982年毕业于厦门大学生物学系，1989年获美国佛蒙特州大学生物化学博士学位，自1989年起在美国Sanford-Burnham医学研究所从事核激素受体的基础研究和药物开发应用工作。张晓坤教授长期从事核激素受体的前沿研究，在《自然》，《科学》及《细胞》等国际核心期刊发表了100余篇具有重要创见的核激素受体研究论文，并在美国获得十几项专利。张晓坤教授是核激素受体RXR 同源二聚体及异源二聚体作用机制的发现者，根据其发现的新型分子作用机制，张晓坤教授及其团队在1999年成功开发了世界上第一个针对RXR靶点的抗癌专利药Targretin。Targretin被药物界同行认为是从1993~2001年9年间国际上22个被美国FDA批准的最有创新突破的靶点药物之一。近年来张晓坤教授及团队率先在国际上报道了核激素受体的非基因型作用机制及针对该机制的靶点药物开发新模式，并发现了多个针对该模式的具有开发潜力的药物先导小分子化合物及小肽，为寻找高效低毒的靶向核激素受体的药物及制定个性化治疗策略探索了一条新的途径。

周宏灏

周宏灏教授，中国工程院院士，湖南省科协副主席。1962年毕业于武汉医学院医疗系，历任内科住院医生、湖南医科大学讲师、副教授、教授和副校长等。现任中南大学临床药理研究所和遗传药理研究所所长、中南大学湘雅医学检验所所长、中南大学国家重点学科药理学首席教授、临床药理国家培训中心和药品临床研究国家培训中心主任。

周宏灏院士是我国遗传药理学和药物基因组学学科的开拓者和带头人，长期从事遗传药理学和药物基因组学的教学和研究。他的主要科学贡献是发现和阐明了遗传因素引起药物种族和个体差异的若干现象和机制及其规律，建立了有我国国家和民族特色的遗传药理学理论体系，并率先将遗传药理学理论应用于临床，启动了以遗传药理学和药物基因组学为基础的“量体裁衣”个体化药物治疗。

经30多年的系统研究，带领他的学术团队积累、沉淀、凝练了大量科研成果，在国际SCI刊物包括《新英格兰医学杂志》上发了200多篇英文论文，出版了《遗传药理学》中、英文专著和研究生教材4部、高等医药院校五年制和八年制《药理学》中、英文教材6部，本专业其他专著3部，培养了200多名硕博士或博士后。周院士是国际遗传药理学和药物基因组学学会创始人之一，并创建了中国药理学会药物基因组学专业委员会并任首任主任委员。

Biography
主持人介绍

曹亚

曹亚 教授、博士生导师。现任中南大学肿瘤研究所副所长、教育部癌变与侵袭重点实验室主任、中南大学分子影像中心主任、国务院学位委员会委员、国家自然科学基金委员会评审组委员、中华医学会病理生理学会肿瘤专业委员会主任，任《Mol Carcinogenesis》、《Plos one》、《Cancer Prevention Res》编委。

曹亚获得国际抗癌联盟基金和美国洛克非勒基金的资助，先后五次赴美国国立癌症研究院进行合作研究。获得多项国家自然科学基金、国家“973”项目、“863”科研项目及美国中华医学基金，于1995年获得国家杰出青年科学基金。是“全国优秀博士学位”论文奖指导老师。获国家科学技术委员会国家科学技术进步二等奖，国家教育委员会科学技术进步奖二等奖，教育部高等学校科学研究优秀成果奖自然科学二等奖，卫生部科学技术进步二等奖，湖南省自然科学奖一等奖1项。在《*Nature Reviews Cancer*》等杂志上发表论文100多篇。

戴立忠

戴立忠博士，普林斯顿大学博士、麻省理工学院博士后，中组部千人计划国家特聘专家，湖南省百人计划特聘专家，中国侨联特聘专家。1992年北京大学硕士毕业后于1993年赴美留学，曾担任美国基因探针公司资深科学家。现任湖南圣湘生物科技有限公司董事长，湖南省医药行业协会副会长，湖南大学特聘教授、中南大学兼职教授。

戴立忠博士致力于人体病原微生物的基因诊断及基因诊断试剂的研究和开发，在分子诊断和生物酶的研究方面积累了丰富的经验，具有较高的学术水平和广阔的国际视野，由他创立的圣湘生物科技有限公司攻克了磁珠包被与修饰等关键技术，开发了填补国内空白的磁珠法高精度核酸定量诊断平台和全球独创一步法病原体核酸定量检测平台，自主开发针对传染病、肿瘤等重大疾病的高精度基因诊断技术、产品及其配套自动化仪器，目前上市的相关产品达到30余种，拥有自主创新专利近30项，这些产品技术国际领先、临床应用价值突出，已在国内二甲、三甲医院广泛应用，将肝炎及其它血源传染病的有效监控和防治推广到全社会的每个角落，社会经济效益显著，同时，这些产品已打入东南亚、中东等国际市场，有效提升了国内医疗相关技术水平及我国医疗核酸诊断行业的国际竞争力。

在戴立忠博士的带领下，圣湘生物短短4年多时间发展成为湖南最大的诊断试剂生产企业，成为湖南打造“千亿医药产业”的重要组成部分。戴立忠博士因其创新成果及其产业化转换的突出业绩，入选2010年度中组部“千人计划”特聘专家和湖南省“百人计划”特聘专家。其创业事迹也多次被《人民日报》、《光明日报》、《湖南日报》等媒体报道。

报告摘要（演讲嘉宾字母顺序）

选择性热休克蛋白90抑制剂及医学应用

Brian S. J. Blagg
美国堪萨斯大学药学院药物化学系

热休克蛋白90据称对超过二百个底物的分子构象起稳定性作用。在这些底物蛋白中，很多对细胞分化的信号传导通路起着关键性作用。因此热休克蛋白90已经成为多种信号传导中枢，从而成为抗肿瘤研究的重要分子靶点。到目前为止，有超过15个目标N终端的小分子热休克蛋白90抑制剂进入临床实验，遗憾的是这些化合物要么疗效不佳，要么耐受性不够理想而未能如愿。我们实验室把重点放在抑制C-端结合部位并开发亚型选择性热休克蛋白90抑制剂。这些新的策略卓有成效，发现了有效地抑制底物蛋白的降解并可诱导热休克反应，并具有亚型选择性的小分子抑制剂，从而找到治疗和蛋白错误折叠相关疾病的新途径。这个报告重点介绍靶向热休克蛋白90的C端，并具有亚型选择性的抑制剂，用于治疗各种和热休克蛋白90相关的适应症。

旧药开发新的适应症

Tony Giordano
TheraVasc 制药公司

药物再利用为进入市场提供了一个快速、经济有效的策略，同时减少了传统药物开发项目的风险。这里介绍了三种不同的再利用策略。第一种策略涉及亚硝酸钠的再利用，其可注射用于治疗氰化物中毒，亦可改为口服制剂用于周围动脉疾患。动物实验数据表明该产品可选择性地刺激血管生成，增强伤口愈合，抑制肾病并防止组织坏死的发生，早期临床数据亦能证实。第二种策略利用食品疗法将一种名为GRAS产品用于充血性心力衰竭的治疗，其中包括对医疗食物开发需求量的调整。最后一种策略着重于再利用一种生物样品胰岛素，其可注射用于治疗糖尿病，亦可改为吸入制剂用于治疗阿尔茨海默氏症。

根据抗体和Fc受体功能寻找治疗炎症和癌症新药的生物标记

P. Mark Hogarth
澳大利亚Burnet 研究所、墨尔本大学

抗体是高度进化，特异，和有效的免疫中介。抗体通过细胞表面的一类叫Fc受体的特殊受体活化白细胞。抗体和Fc受体的相互作用对临床用药以及生物制药工业均有极大意义。对这些相互作用的进一步了解可以为以制定治疗策略和开开发新药打下基础。未来几十年将很有可能会通过调控这些相互作用改进抗炎药物，增加疫苗有效性，和开发活性更强更有用的抗体。

另外，寻找和疾病相关的生物标记会进一步扩大单抗作为治疗手段的应用。单抗目前只在少数几个疾病治疗中取得巨大成功，因为缺少合适的生物标记治疗更广泛的疾病依然十分困难。澳大利亚的联合科研中心项目作为一个寻找生物标记的有严密组织的多中心手段可能会成为发现有用靶点的跨学科研究方法之一。

抗体和Fc受体的相互作用可从三个方面考虑。首先，在正常情况下，抗体通过Fc受体诱导炎症从而清除抗原并成为有效疫苗的一个重要组成部分。其次，在向自身免疫疾病这样的毒性免疫反应中，抗体：抗原复合物启动可以导致组织损伤比如血管炎，列性肾炎的炎症反应。在某些疾病如红斑狼疮和免疫性血小板减少症可以导致严重的病症甚至死亡。第三，单抗是目前药物研发产品线的基础之一。它们在相对较少的几个疾病领域取得的巨大成功促使人们寻找治疗其它很多疾病的单抗药物。像利妥昔单抗这样的抗体药物之所以有效是因为他们充分利用了和内源性及适应性免疫细胞Fc受体作用的下游信号体系。

深入了解调控抗体和Fc受体相互作用可以影响未来科研和制药工业走向。

中国聚焦医药创新

蒋华良
中国科学院上海药物研究所

中国政府和工业界越来越重视生物医药创新，一个标志性的工作是中国政府于2008年启动了《重大新药创制》重大科技专项，总投资66亿人民币(合960万美元)，加速中国的药物研发。这一专项支持科研机构和医药企业研发，实现三大目标：构建和完善中国的医药研发体系和平台，包括新药发现平台，GLP平台，GMP平台和GCP平台；发现新分子实体和新生物技术药物；发展前瞻性的技术。本报告拟介绍对中国医药创新的看法。

在幼猪和成年猪中开展药物动力学研究：其PK参数是否与人相似？

Gregory T. Knipp
美国普渡大学药学院

术语“Therapeutic Orphans”首见于1962年并用于描述儿童群体。五十年后的今天这个术语依然存在，因为很少有人为儿童开发新的治疗药物。由于需要弄明与各种年龄阶段相关的生物学、临床，及配方特性，特别是在全球范围中，儿科药物开发便成为了一项艰巨的任务。缺

报告摘要

乏适龄的配方已成为一个焦点，并获得了整个行业包括监管机构和临床医师的大量兴趣，其缺乏发展的一个主要原因是在临床前研究期间动态儿科发展阶段无法准确预测临床安全性和有效性，这个讲座将重点讲述目前儿科药物发展所面临的一些挑战。另外，我们实验室中的一个案例研究中，利用治疗结核病的一线抗生素利福平配方作用于幼猪和成年猪以确定其相关药代动力学（PK）参数，结果显示猪和人的吸收和消除参数十分相似。此外，猪PK参数随着年龄的变化与在人中观察到的变化相似。最后，有例子表明成年猪可能替代人在临床前PK值的评估中发挥潜能。

天然产物的有效次级代谢物和新药研发

刘吉开
中国科学院昆明植物研究所、植物化学与西部植物资源持续利用国家重点实验室

中国具有丰富的植物和高等真菌。这些丰富的生物资源继而产生多种多样的次生代谢产物。我们课题组主要研究中国西部尚未开发的各种来源的植物和高等真菌。为了从植物和高等真菌中发现有效次级代谢物，我们实验室在过去15年研究了中国西南地区200多种高等真菌和植物的化学成分，分离鉴定了超过1500化合物，其中500余种属于新的、具有独特结构的氨基酸、萜类化合物、酚类化合物，和含氮化合物。多种化合物呈现有意义的的药理活性。

靶向肿瘤微环境研究的问题、策略和前景

Giovanni Melillo
美国施贵宝制药公司

肿瘤微环境在肿瘤的发生与进展过程中起到了关键作用的概念已被广泛认同。尽管基因的改变促使肿瘤细胞的增殖也可以作为肿瘤治疗的靶标，但是肿瘤细胞与宿主细胞之间的密切联系毫无疑问决定着肿瘤细胞增殖的速度以及其对治疗的反应。肿瘤微环境中的很多因素深刻影响着肿瘤细胞的生物学行为及其对治疗剂的反应。人类肿瘤中经常会检测组织缺氧的状态，缺氧已经被作为肿瘤微环境的标志。缺氧导致肿瘤代谢的改变，增加血管生成相关物质的产生和激活调节侵袭和转移的信号通路。总而言之，缺氧的肿瘤微环境会增加肿瘤放化疗的抵抗性。相反，肿瘤内部的缺氧也许也为肿瘤的治疗提供了一种可行性，比如针对缺氧的细胞，耗尽周围正常组织的含氧量。缺氧诱导因子1（HIF-1）是一种低氧状态下重要的转录调节因子。尽管绝大多数HIF-1的抑制剂缺乏专一性，但是其与抗肿瘤活性的相关性早已在异种移植与早期的临床实验中被证实。与抗肿瘤血管生成的药物合用，尽管可能增加肿瘤内部组织的缺氧，但是可能是发现一种新的针对HIF的肿瘤治疗方法。直接以HIF-1为靶标的研究方案中，许多策略针对HIF转录下游调节因子。今后将会有证据揭示肿瘤微环境新的活化通路以及新的肿瘤治疗方法的新靶标。

传染病的预防和治疗：碳水化合物疫苗与连续合成法

Peter H. Seeberger
德国马普胶体与界面 研究所
德国柏林大学
美国Burnham研究所

许多病原微生物如细菌、霉菌、病毒、原虫表面都携带有其独特的多聚糖。如今，许多针对细菌的疫苗都十分的有效。由于许多病原微生物很难人工培养，其低聚糖也很难被分离，所以低聚糖抗原的合成是一种新的制作疫苗可行途径。基于以往被大大超越的自动合成平台，我们正在研发新型的针对细菌、霉菌和原虫等寄生虫感染的疫苗。除了作为抗原，低聚糖的合成也可以作为制造单克隆抗体的工具和建立多聚糖芯片用于疫苗抗原表位的定位。我们使用B. anthracis, C. difficile和疟疾作为例子来解释这个方法。

以往，化学家们已经将参与此种反应的抗原大批的投入生成。近些年，连续合成系统生产疫苗已是越来越普遍。治疗疟疾的药物artemisinin已被大量生产。

抗肿瘤抗体生物药：从早期研发到注册上市

Peter Senter
美国西雅图遗传制药公司

单克隆抗体(mAbs)在肿瘤药物中扮演着重要的角色，有效药物诸如赫赛汀、爱必妥、阿瓦斯丁、利妥昔单抗已经广泛的应用与治疗。这些药物发挥作用的机制是通过与Fc受体阳性细胞结合参与信号通路和发挥效应。为了加强此种抗原抗体的结合，越来越多的人开始关注寻找一种通过选择性强化与Fc段有力结合以增强单克隆抗体ADCC作用的受体。已经有被改造了可产生Fc段放大与受体结合抗体的细胞系(Xencor technology)，也有改变单克隆抗体重链碳水化合物结构的方法(Glycart and Biowa technologies)，从而与更多的受体结合。我们发现了一种可替换

报告摘要（演讲嘉宾字母顺序）

的方法包括确定岩藻糖转移酶与GDP-d-mannose dehydratase(GMD)的生化抑制剂。此种抑制剂是岩藻糖类似物，加入细胞之后不仅可以诱导单克隆抗体的产生，也可以诱导与岩藻糖糖基化相关的重要蛋白。许多此项技术应用的产品将会在生物体内或者体外等多处探讨。

单克隆抗体的活性可以通过与细胞毒性药物的结合而被提高。尽管此领域已经被研究多年，但是直到最近单克隆抗体与药物结合在肿瘤化疗中的潜在疗效才被揭示出来。随着对抗原靶标，正常组织表达、药物效力、药物机制、结合稳定性以及药物释放机制的深入研究，单克隆抗体领域进展迅速并为抗体药物结合联合应用于治疗的可行性提供了保障。ADCETRIS (Brentuximab vedotin, SGN-35)就是ADC可行的例子。在2011年八月，ADCETRIS已经被美国食品药品监管局认证作为治疗易复发难治愈的霍奇金式淋巴瘤和系统间变大细胞淋巴瘤的药物，而这两种药物一直缺乏有效的药物。我们将会给出关于此类药物研发和技术的发展概况。

基于吡咯-咪唑多聚酰胺的基因开关

杉山弘

京都大学化学系及整合细胞与材料研究所

细胞重组涉及基因表达的深度变化，基因的“开”与“关”在不同层次精确控制着基因表达。转录激活因子在基因表达中起关键作用并有能力掌控细胞的分化命运。基于此构想，在体细胞中通过强力激活四种转录因子人工诱导多潜能已获成功，由此而提供了崭新的治疗方法。 尽管有这些最近的突破，但在诱导性多潜能干细胞进入可能的治疗应用之前，还要攻克多个难题， 包括表观记忆保留等。因染色质动态结构与细胞的基本属性紧密相连，所以染色质修饰可以奠定和维持体细胞的多潜能。但染色质修饰不具备选择性，如果给予它们识别功能，就可以精确调控某个基因而导致多潜能。作为一种新颖的化学手段定点染色质修饰而控制细胞命运，我们设计合成了名为SAHA-PIP的化合物库。此类化合物由吡咯-咪唑多聚酰胺和修饰染色质的HDAC抑制剂（如：SAHA2）组成。我们进而研究了这些化合物对诱导性多潜能干细胞因子的影响。 我将详细报告这些有趣的研究结果。

核酸类药物在抗肿瘤和抗病毒中的应用

孙仑泉

中南大学分子研究中心（湘雅医院）

核酸类药物主要包括反义核酸、小干扰核酸、脱氧核酶等。目前在美欧等国已有超过30项的核酸药物进入临床试验，2项已成功上市。核酸类药物目前主要包括siRNA、反义核酸、脱氧核酶等。前两类的作用机制需要细胞内酶系统的参与，因而往往产生脱靶效应(off-target effect)。脱氧核酶是一类具有靶向结合和酶切活性的双功能分子，其降解mRNA不需要细胞酶系的介导，因此，特异性强，无脱靶效应，是一类全新的核酸药物。

脱氧核酶（DNAzyme）是利用体外分子进化技术获得的一种具有催化功能的短片段单链DNA，具有高效的催化活性和结构识别能力。脱氧核酶将高效的催化降解能力与反义的靶向识别能力结合，能够特异地针对靶标从mRNA 水平关闭靶基因，从而调控目标蛋白质的表达，是一种高效特异的靶向基因治疗的新策略。与其他几种从mRNA水平关闭致病基因的方法相比，脱氧核酶具有其独特的优势：其化学本质为寡核苷酸，性质相对稳定；分子量小，结构相对简单，对底物的趋近性好；催化效率及特异性高，副作用低；靶位点选择的限制更少；易于合成，价格低廉。设计不同的脱氧核酶可通过切割相应的mRNA，从而调控蛋白质的表达。作为一种新型的RNA水平强效基因灭活因子，脱氧核酶为治疗肿瘤、病毒感染性疾病以及其它相关疾病提供了一条全新的策略。目前已有多种具有活性的脱氧核酶在动物模型中进行了实验，并证实了其抗肿瘤和抗病毒等效应。

分子医学的基石：分子工具

谭蔚泓

化学生物传感与计量学（湖南大学）国家重点实验室

湖南大学生物学院和化学化工学院

为了使人们对疾病的认识深入到分子水平，需要发展一种新的分子探针去特异性识别疾病的标志物。目前，分子医学中缺乏高效的分子探针用于诊断和治疗人类疾病。核酸适配体则在这方面具有很大的潜力。核酸适配体是一段DNA（脱氧核糖核酸）或者RNA（核糖核酸）序列,它可以特异性的识别目标分子。近年来，基于Cell-SELEX（指数富集配体系统进化法）新技术得到了可以特异性识别细胞的核酸适配体。Cell-SELEX是以完整的细胞作为

报告摘要

目标物，该筛选过程具有简单、快速和可再生等优点。被筛选出的核酸适配体与目标物的结合系数是在nmol-pmol之间。迄今为止，我们已经筛选出许多可以特异性识别癌细胞的核酸适配体，并将其作为癌症研究的分子工具。这些工具已经用于肿瘤细胞的超灵敏检测，分子成像，药物的运输以及癌症标志物的发现。我们将报告我们在发现癌症标志物方面的最新研究进展。

抗寄生虫药物 Oxaboroles

Thomas W. von Geldern
美国Embedded 咨询公司

在过往的八十年中，针对热带疾病(NTDs)的药物一直被医药公司忽略。为了改善此种状况，此类药物的研发(DNDi)已经形成了一整套新型的认证和优化合作模式，并已被应用于原生生物寄生虫家族药物的研发。

首先应用于人类非洲锥虫病(HAT，非洲睡眠疾病)。最初被研发的是SCYX-7158，经过反复优化一个含硼先导物动力学特性和血脑屏障易通透性，此化合物现今在进行临床一期实验，旨在应用于锥虫病的一期和二期的治疗。

为创新型医药生物公司最大化专利价值

Ningling Wang
美国Finnegan, Henderson, Farabow, Garrett & Dunner公司

专利保护和维权一直是生命科学产业成功的关键. 本演讲讨论如何为创新型医药生物公司，特别是在美国，最大化专利价值. 具体而言， 本演讲包括下述主题:

- 撰写和获取强有力的专利;
- 专利期延长;
- 美国发明法案下的机会和挑战;
- 给创新型医药生物公司的建议.

以Methylnaltrexone为范例浅谈美国新药开发

Chun-Su Yuan
美国芝加哥大学Tang植物药研究所

药物研发起步于新型生物活性化合物。在过去几十年中有一半以上的药物都来自于天然化合物，或者其衍生物、合成或半合成类似物。在新药研发的过程中，研究首先在动物模型中进行。新型化合物相关的药理学与毒理学研究必须首先在动物体内完成之后才能进行人体临床实验。最初临床实验的目的是为被评估的药物提供安全性和有效性的客观证据。本次报告将根据临床研究的不同时期作简单的介绍。

下面以甲基纳曲酮(MNTX)为例，就我们自己的经验讨论在美国的新药研发。

正如我们所知，罂粟千百年来作为治疗腹泻和止疼药。在1803年，一种纯天然活性碱性物质，“吗啡”从罂粟中分离出来，并以希腊摩尔莆神（睡梦之神）的名字命名。现今，吗啡于其它阿片类药物被广泛应用缓解中重度疼痛。然而，此类药物最常见的副作用为肠道功能障碍，如便秘、术后肠梗阻和外周阿片类效应等。阿片类药物诱导的肠道功能紊乱是非常严重的问题。还有重复使用该类药物产生的耐受性，并且肠道的副作用并未因为耐受性的出现而减弱或消退。

从1994年开始，在芝加哥大学，我们组开始了针对肠道功能紊乱的甲基纳曲酮进行临床前、临床一期和二期的研究。2001年，我们学校和Progenics 医药公司注册了该药物。2005年，Progenics 和 Wyeth公司加入到甲基纳曲酮治疗阿片类药物副作用的研发。2008年，甲基纳曲酮得到了美国FDA的认证(Relistor®)。截止2011年，该药物被广泛应用于50多个国家。Relistor®由Salix医药公司生产。该药物的适应症和成分还在进一步的研发和探讨中。

核受体非基因型作用机制及药物开发

张晓坤
福建省厦门市厦门大学药学院

核受体是介导类固醇，甲状腺激素，维生素D和维生素A的代谢产物（维甲酸）的一类功能蛋白。核受体通过与配体的结合发挥其多种多样的生物学功能，如类固醇激素或维生素衍生物通过其相应受体调控与内分泌相关的多种疾病和癌症的发生和发展，功能的多样性使核受体成为药物开发的第二大靶点。传统理论认为核受体是一类配体激活的转录因子，调控多种重要靶基因的转录活性。最新的研究表明，核受体还可以在细胞质中发挥非基因型作用而调控对疾病发生发展和药物耐受起重要作用的生物学过程，核受体非基因型功能的发现为药物开发提供了新的策略与方向。本课题组主要集中研究两个重要核受体Nur77和RXRa 的非基因型功能，开发靶向Nur77和 RXRa非基因型功能的新型肿瘤治疗药物。Nur77，即TR3 或NGFI-B，是核受体超大家族中最为有效的凋亡诱导蛋白。本课题组通过Nur77定位于线粒体而诱导细胞调亡的研究，在世界上首次阐述了核受体非基因型作用机制。Nur77的线粒体定位需要与Bcl-2蛋白相互作用。Bcl-2与Nur77的相互作用导致Bcl-

报告摘要（演讲嘉宾字母顺序）

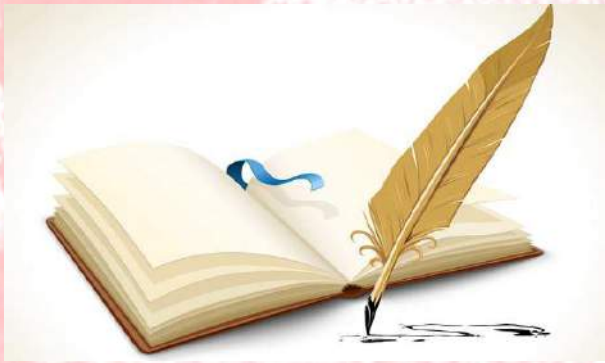
2蛋白构象发生改变，从一个抗凋亡因子转化成促凋亡因子。上述结果阐明了一条基于Nur77非基因型功能的新型凋亡通路。RXRa 是核受体超家族中另外一个重要蛋白，在众多生物学进程中发挥着至关重要的作用。RXRa 表达和功能的改变与肿瘤发生发展息息相关，表明RXRa 可能是肿瘤治疗的新靶点。最近本课题组报道了肿瘤细胞中特异表达N端缺失的RXRa 蛋白（tRXRa）。与全长RXRa 的细胞核定位相区别，tRXRa 定位于细胞质中与PI3K的p85α亚基相互作用，激活肿瘤细胞中PI3K/AKT 存活信号通路。对Nur77介导的细胞凋亡通路和tRXRa 介导的PI3K/AKT 细胞存活信号通路的调节足以决定肿瘤细胞的生死，因而在肿瘤药物开发中意义重大。本课题组已开发和评估了部分靶向上述通路的抗肿瘤候选药物。

个体化医学的实施与展望

周宏灏
中南大学临床药理研究所

1990年启动、2003年完成的人类基因组计划（HGP），确定、阐明和记录了人类的全部DNA序列，从而，人类开始进入了全新的以基因组医学为核心的医学模式，即基因组医学或个体化医学的新时代。HGP的完成使疾病发生的遗传基础得以阐明，致使实现对疾病的预测、预防和早期诊断以及发病后的个体化治疗成为可能。在基因组医学或个体化医学中，由于遗传药理学有自上世纪50年代起的60多年积累的大量试验和临床研究数据，对药物反应个体差异的遗传机制，也就是药物代谢酶、药物转运体、药物靶点的基因多态性在许多药物的毒性和有效性中的作用有了深入的认识，也由于基因分析方法的成熟建立，以遗传变异为基础的个体化药物治疗已经成为个体化医学的较成熟领域，开始进入临床应用。迄今为止，已有近100种药物经美国FDA批准贴上了遗传标签，用于指示不同基因型的患者在应用该药物时对疗效和毒性的指示作用，并要求临床应用这些药物时，需要或者检测，或者关注包括40多种基因变异在这些药物有效性和安全性方面的影响，并对药物剂量和药物选择进行调整。同时也批准了多种用于临床个体化药物治疗中可应用的基因检测技术和试剂盒。例如，6-巯基嘌呤、6-硫代鸟嘌呤或硫唑嘌呤治疗小儿急性淋巴细胞性白血病对TPMT基因变异的检测并作为常规；应用UGT1A1基因单倍型的检测预测伊利替康的毒性反应并作为用药选择和剂量调整的依据；检测K-ras基因突变和Her 2受体过表达决定是否在肺癌病人中使用西妥西或在乳腺癌病人中应用赫塞汀。更有研究者量化了影响抗凝药华法林治疗剂量的多个遗传和非遗传因子的作用，将各种影响因素和华法林剂量之间的关系整理为计算公式，并以此为基础创建了非赢利的软件和网站，供临床免费使用。中南大学临床药理研究所在有30年遗传药理学研究的积累基础上，在上世纪90年代中期在国内率先提出并倡导“基因导向个体化药物治疗”，并作为2010年年代成立的“国际遗传药理学倡导组织（PGENI）”的全球七个中心之一和东亚地区唯一中心，积极推行基因导向个体化用药，且已经在湖南、北京、上海、山东、河南、广东、安徽、湖北、江西、重庆等地陆续开展临床检测项目，正式将药物基因组学和遗传药理学知识推向临床实践。迄今，在多年的个体化用药咨询实践中，已经有超过10000名高血压、器官移植、恶性肿瘤、糖尿病患者经过了基因检测和药物调整，为这些病人安全有效用药提供了保证。

个体化医学仍然面临巨大的挑战，包括人体生物学系统极其复杂，多因素引起药物反应个体差异；分子诊断方法的针对性、敏感性、精确性、适用性及标准化；医疗保健体系不能完全提供充分的分子学方法；大量遗传药理学和药物基因组学数据的不确定性和分析的困难性；产生了新的伦理、法律和社会问题；政策管理的前瞻，尤其是个体化医学知识的在教育和专业队伍的建立和培训。



承办、协办及支持单位简介

长沙介绍

长沙为湖南省省会，位于湖南省东部，古时称为“潭州”，是著名的楚汉名城、山水洲城和快乐之都。长沙作为我国首批历史文化名城，具有三千年灿烂的古城文明史，是楚汉文明和湖湘文化的始源地，世界考古奇迹“马王堆西汉陵墓”出土于此。

长沙现为湖南省省会，是湖南省的政治、经济、文化、交通和科教中心，亦是环长株潭城市群龙头城市。长沙是我国南方地区重要的特大中心城市，综合实力位居全国前列，综合竞争力排名全国第九、中西部地区第一。随着“中部崛起”战略的深化和长株潭融城，长沙（长株潭）作为国家级两型社会（资源节约型和环境友好型）综合配套改革试验区，肩负着引领全国城市走可持续发展道路的历史使命并为之榜样。同时，长沙以“心忧天下，敢为人先”的城市精神努力构造和谐美好新长沙， 致力打造一个内陆最开放、具有重大国际影响力的文化名城和世界级旅游目的地。

中南大学

中南大学坐落在我国历史文化名城长沙，为教育部直属的全国重点综合性大学，是国家首批实施“211工程”重点建设的高校，也是国家“985工程”部省重点共建的高水平大学。现任校党委书记为高文兵，校长为张尧学院士。

中南大学于2004年4月29日经国务院批准，由卫生部所属湖南医科大学、铁道部所属长沙铁道学院与教育部直属高校中南工业大学合并组建而成。现占地5117亩。

原中南工业大学前身为中南矿冶学院，1952年在全国高校院系调整中，由武汉大学、中山大学、广西大学、湖南大学、南昌大学、北京工业学院等六所院校的矿冶类学科组建而成；原湖南医科大学前身是湘雅医学专门学校，由湖南育群学会与美国雅礼学会联合创建于1914年；原长沙铁道学院前身是1953年组建的中南土木建筑学院，1960年以成建制的部分系和教研室为基础成立。

中南大学师资力量雄厚，汇集了一大批在国际国内有重要影响的著名学者、专家。现有中国科学院院士3人，中国工程院院士14人，国务院学位委员会学科评议组成员9人，国家级有突出贡献的中青年专家23人，享受国务院政府特殊津贴的专家532人；有博士生导师805人；有“长沙学者奖励计划”特聘、讲座教授28人，“千人计划”专家34人。学校还在国内外聘请了一大批知名学者担任名誉教授、客座教授和兼职教授。

国家重点学科 National Key Disciplines

中南大学的学科涵盖工学、理学、医学、管理学、文学、法学、经济学、哲学、教育学、历史学、农学、艺术学等十二大门类，辐射军事学。学校现设30个二级学院，有92个本科招生专业。设立了研究生院，有一级学科国家重点学科6个，二级学科国家重点学科12个，国家重点（培育）学科1个，一级学科国家重点学科数在全国高校中并列第8位；有博士学位授权学科一级学科33个，硕士学位授权学科一级学科58个，硕士专业学位授权学科19个；有博士后科研流动站24个，居全国高校第九位。

长沙高新技术产业开发区

长沙高新技术产业开发区创建于1988年10月。1991年3月经国务院批准为首批27个国家级高新区之一。1997年5月经原国家科委批准调整为“一区四园”，即由岳麓山高科技园、星沙工业高科技园、隆平农业高科技园、远大高科技园和市内政策区组成，其中岳麓山高科技园为长沙高新区直管核心园区。2009年，获批国家级创新型科技园区，是长株潭两型社会和长沙创新型城市建设核心区。连续6次被评为全国先进高新区，综合创新能力列全国高新区第六位。

“十一五”期间，园区基本保持技工贸总收入三年翻一番、财税收入两年翻一番的发展速度。截止2010年，入园企业共5000多家。2010年全区完成技工贸总收入1800亿元。其中麓谷园区总收入1088亿元，实现总产值 900亿元，完成财政总收入35.5亿元。财政一般预算收入 14.6亿元。今年1-6月，全区实现工业总产值1060亿，完成营业总收入1165亿。麓谷园区实现技工贸总收入660亿元，实现总产值638亿元；完成财政收入35.6亿元，财政一般预算收入11.2亿元；实际到位外资金额16589万美元，引进市外境内资金16.8亿元；规模以上工业企业累计完成工业总产值533亿元，完成全社会固定资产投资76亿元。

一、主导产业强劲增长

“十一五”期间，长沙高新区各主导产业规模工业产值最高保持了50%以上的增长，累计完成高新技术总产值2855亿元，实现利税332亿元，高新技术产业增加值达到690亿元，占全市90%以上，全省30%以上。高端装备制造业、软件和电子信息、新材料、生物医药与节能环保四大主导产业的集群格局基本形成。先进制造产业发展突飞猛进，成为全省首个千亿产业，其龙头企业中联重科蜚声国际，排名世界工

承办、协办及支持单位简介

程机械第10位；新材料产业亮点纷呈，博云新材的C/C刹车材料全球领先，杉杉新材的锂电池和科力远的镍氢电池位居全国前列；电子信息产业正在跨越发展，“威胜”、“拓维”品牌名扬海内外；生物医药异军突起，连续5年保持26%的增长速度，即将产生三诺生物、兴嘉生物、尔康医药、方盛制药、爱威科技等一批上市公司；以红太阳光电、神州光电、潇湘神光等龙头企业为代表的新能源光伏产业不断壮大，年产值即将过百亿。现代服务业蓬勃发展，总麓谷企业广场中小企业孵化基地、科技企业加速器和服务外包基地、麓谷商业中心等项目加快建设，科技产业新城功能进一步完善。

二、园区建设稳步推进

根据园区规划，麓谷科技产业新城将形成“八纵四横”的路网框架和“一心七区”的空间开发架构。麓谷主要容纳工业项目，辅之以满足工业发展及科技创新需求的生产性服务业，分为麓谷建成区、长沙信息产业园等七大以工业项目为主的产业功能区；根据雷锋湖城市中心辐射范围，沿主干道路布局总部经济、孵化经济及生产性服务产业。

近年来，麓谷每年以3-4平方公里的速度推进，累计完成基础设施投入近60亿元，目前建成区已经达到20平方公里，城市各项配套功能日益完善。仅2010年，投入征地拆迁和基础设施建设资金26亿多元，全面拉开40平方公里的路网框架。麓谷和馨园、和沁园、和润园、华龙和金南家园等5个安置保障房项目相继启动，规划建设规模186万平米，总投资约36亿元。并率先在全市启动10万人规模的公共租赁住房建设。加快建设长沙信息产业园、高端装备制造产业园、新材料产业园、节能环保产业园和生物医药产业园等五个专业园区。

三、招商引资成效明现

近年来，高新区坚持招大引外与培新育小相结合，突出战略导向，优化整合资源，做大存量，引入增量，招商引资成效明显。2010年，新引进各类注册企业727家，比上年增加199家，注册资本1000万元以上的企业100家，1亿元以上的企业10家，引进富士康、戴尔、伊藤忠、霍尼韦尔等世界500强企业5家，全区世界500强企业达16家，占全市的20%以上。上市企业达到29家，新增4家，中联重科成为湖南首家A+H股上市公司，融资总额达到180多亿元。中联重科新基地、C919大飞机机轮、红太阳光电产业基地等签约购地项目36个，全部投产后，可形成工业产值800亿元以上。深入开展“两帮两促”活动，全力推动产业项目开工建设，2010年共有50多个工业项目开工建设，中冶长天生产基地、金天钛业、金杯电工、隆平种业等25个工业项目竣工投产；力宇燃气、长沙机床、宇顺电子、方盛制药、怡亚通物流等20个项目开工建设。奥盛特项目从开工到投产仅用了4个月，刷新了项目建设的“麓谷速度”。

四、配套服务健全完善

管委会不断健全完善配套服务，加快推进科技和金融结合试点工作。2010年，财政直接安排2.3亿元设立中小企业投融资平台。设立近5亿元的产业发展专项资金，全方位、多层次对龙头企业、重大项目、科技型中小企业、创新平台、科技人才等方面给予引导支持。通过建立多层次金融服务平台，包括长沙高新开发区产业促进有限公司、长沙高新区麓谷创业投资管理有限公司、长沙高新区创业投资引导基金有限公司、长沙高新区麓谷小额贷款公司以及各担保公司等，为企业融资100多亿元。以大学科技园和留学生创业园为主体，引进民间资本，加大孵化器、加速器建设，目前孵化面积达100万平方米，在孵企业600多家。占地366亩、投资9亿元，建设规模43万平米，集研发、办公、生产、综合配套多种功能为一体的麓谷企业广场为广大成长型企业破解升级难题。各类金融机构加快集聚，现已有200多家机构落户麓谷，注册投资基金230多亿元。

“十二五” 的高新区将进入了一个厚积薄发，高速发展的黄金战略机遇期。“十二五”规划的总体主要目标：全面实施“6543”工程，到十二五期末，麓谷园区形成先进装备制造、新材料、电子信息、生物医药、新能源与节能环保产业和高技术服务业6大产业集群；建成先进装备制造产业园、新材料产业园、信息产业园、生物医药产业园、新能源与节能环保产业园5大专业园区；建成区达到40平方公里；麓谷园区技工贸总收入跨越3000亿元台阶。财税总收入过100亿元。

长沙国家生物产业基地简介

长沙国家生物产业基地前身浏阳生物医药园，1998年经省政府批准立项，首期规划面积13.4平方公里。园区位于长沙市东郊，距长沙35公里、浏阳25公里、黄花国际机场18公里、京珠高速20公里、武广高铁30公里，长浏高速、大浏高速、浏醴高速、319国道和从长沙直达园区的无费公路开元东路穿园而过，长株潭城市轻轨将经过园区并设站，东接长

承办、协办及支持单位简介

三角，南连珠三角，通江达海，交通十分便捷。

长沙国家生物产业基地是全国第一批获批的7个国家级生物产业基地之一。园区2001年10月被联合国工发组织确定为中国唯一国际合作园，2004年被共青团中央授予全国青年创业实践基地，2005年被商务部批准为国家医药出口基地，2006年被国家发改委认定为长沙国家生物产业基地，是中部地区第一个国家级生物产业基地。

长沙国家生物产业基地按照高科技、生态型、国际化定位，以生物医药、健康食品、生物环保、生物能源、生物信息产业为主导，是长株潭城市群高科技产业的主要基地。目前共引进工业企业168家，配套科研、服务、商贸企业125家，是全国中小医药企业最集中的区域之一。园区拥有九芝堂斯奇、泰尔、威尔曼、有色凯铂、春光九汇、迪诺、九典、华纳大、安邦、绿之韵等生物医药企业，拥有香港蓝思科技、台湾介面光电、利尔电子等国际一线电子信息企业，拥有康师傅、盐津铺子、嗑得响等食品企业，诞生湖南省著名商标15个、中国驰名商标3个。

长沙国家生物产业基地实行封闭式管理，一站式办公，并经人民银行批准设立了一级金库，确保税收地方留成部分及时足额返还和企业优惠政策的兑现。

园区创造性建设科技公共平台，以科技公共平台建设促科技创新，以科技创新提升核心竞争力，从而形成特色，形成完整的产业链条和具有竞争力的集群优势。其主要科技公共平台有：湖南医药科技创业中心（生物医药孵化器）和湖南省实验动物中心（湖南省食品药品安全评价中心）。

园区2011年实现工业总产值252亿元、实现财政税收8.3亿元。园区“十二五”末将实现工业总产值1000亿元，实现财政税收40亿元，其中电子信息产业实现产值500亿元、生物医药产业实现产值300亿元、食品和其他产业实现产值200亿元。园区未来将着力打造世界生物经济社区和临空经济区，使长沙成为高科技产业创业之都。

中南大学肿瘤研究所简介

中南大学肿瘤研究所成立于1989年，其所在的中南大学病理学与病理生理学科是我国高校中最早建设的国家重点学科之一。本学科先后于1977年和1981年获得首批医学硕士、博士授予权，1990年被批准为病理生理学国家重点学科，1991年被批准为基础医学博士后流动站，1994年被批准为卫生部癌变原理重点实验室，2000年被批准为教育部癌变与侵袭原理重点实验室、长江学者特聘教授岗位，2001年再次被批准为病理学与病理生理学国家重点学科，2006年以优异的成绩通过国家验收。

肿瘤研究所下设肿瘤分子病理学、肿瘤分子遗传学、肿瘤分子生物学、肿瘤细胞免疫学、细胞生物学、肿瘤侵袭与转移六个研究室。在长期的科研实践中形成了阵容强大的学术带头人队伍及高水平的学术梯队。该梯队拥有中科院院士1人、教授9人、副教授9人、讲师22人，博士导师8人，硕士导师10人，教师队伍中具有博士学历的占90%。国家人事部 “有突出贡献的中青年专家”2人，卫生部“有突出贡献的科技专家”3人，国务院学位委员会和国家教委“突出贡献的中国博士及硕士”各1人，全国优秀科技工作者1人、新世纪优秀人才5人。

经过数十年的艰苦创业，肿瘤研究所以人类鼻咽癌的病因及发病机制为明确而稳定的研究目标，并在此基础上形成了鼻咽癌发病的分子机理研究、肿瘤基因组学与转录组学、肿瘤信号转导机制、肿瘤标志物及靶向治疗、基因工程抗体、肿瘤干细胞研究等既有特色又相互联系的研究方向，形成了明显的学科优势以及学术特色。其鼻咽癌分子机制研究处于国际先进及国内领先水平。

“十一五”以来，肿瘤研究所获得国家、省部级科研基金经费共计6900多万元，包括973项目7项，863项目4项，国家科技攻关项目1项，国家自然科学基金重点项目2项、国家自然科学基金32项，国家自然科学基金与香港研究资助局联合科研基金2项，国家自然科学基金与海外青年学者合作基金1项，国家自然科学基金两个基地项目1项，CMB国际合作课题2项，新世纪人才支持计划3项，申请专利15项，获得3项专利授权。获湖南省科技进步一等奖2项，二等奖2项，教育部科技成果二等奖2项，发表科研论文300多篇，其中SCI收录200多篇；出版专著2部，参编教材及教学参考书4本。

为了保持国家重点学科的可持续发展，肿瘤研究所十分注重人才培养和人才引进工作；“十一五” 共培养博士后6名，博士71名，硕士70名。有2位博士获得全国优秀博士论文， 3位博士获得全国优秀博士论文提名奖，有8位研究生获得湖南省优秀硕、博士论文；从国外引进9人回国、聘请15名海外知名专家担任本所客座教授，参与学科发展方向等重大决策和进行各种形式的学术交流。

目前，肿瘤研究所在国家985、211建设过程中以及国家重大、重点课题实施过程中已建立起国内一流的恶性肿瘤发病机制和靶向治疗研究的理论和技术创新平台，并成为我国

承办、协办及支持单位简介

肿瘤学基础和应用基础研究以及高水平人才培养的重要基地。

中南大学临床药理研究所

我国第一个专门从事遗传药理学和药物基因组学以及个体化医学研究和转化的机构。是药理学国家重点学科、教育部和湖南省重点实验室和工程中心、中美共建的“亚洲遗传药理学示范实验室”、NIH和比尔．盖兹基金资助的“国际药物基因组倡导组织（PGENI）”全球七大中心之一。为中国工程院院士、千人学者、长江学者特聘教授、国家杰出青年所在单位。所长周宏灏院士是国际上药物反应种族差异的发现者和证实者，也是我国遗传药理学和药物基因组学以及基因导向个体化药物治疗的奠基人。

中南大学生物科学与技术学院

中南大学生物科学与技术学院历史悠久，早在1942年，湘雅医学院就建立了生化科，1943年建立了生物学系，1978年建立了分子生物学系……。2003年5月，在我国著名人类与医学遗传学家、中国工程院院士夏家辉教授的大力倡导下，由原湖南医科大学生物化学系、细胞生物学系、遗传学系、分子生物学系、神经生物学系共同组建了全新的生物科学与技术学院。

学院现有专任教职工70多人，其中中国工程院院士1人、“长江学者”　1人、国家“百千万人才工程”1人、享受国务院政府特殊津贴2人；教育部“跨世纪优秀人才计划”、“新世纪优秀人才支持计划”、“高等学校骨干教师资助计划”、“优秀青年教师资助计划”、“高校青年教师奖”获得者9人；湖南省“芙蓉学者”、“121人才工程”人选、“普通高等学校学科带头人”培养对象5人；中南大学“升华学者”特聘教授2人。学院是全国首批生物学一级学科博士点，现有遗传学国家重点学科，生物化学与分子生物学湖南省重点学科。建院以来，已为国家输送各类毕业生数千人，培养了一大批外国留学生和港澳台学生，校友遍布海内外。学校现有全日制本科生、研究生，已形成多规格、多层次的办学格局。

面向未来，学院传承百年湘雅严谨治学的优良传统，遵循立足湖南、服务全国、走向世界、注重内涵、强化特色、跻身一流的基本发展理念，朝着具有医学背景、遗传学特色、国内一流、国际上有一定影响的创新型学院的目标奋力迈进！

长沙学院简介

长沙学院始建于1983年，位于中国中部的历史和文化名城—长沙，是一所全日制本科学校。学校拥有16个系部，30多个本科专业，授予学士学位。目前，学校有教职员工895人，包括教授102人，副教授165人。在校全日制学生1300多名，成教学生4800多人。学校属多学科综合型大学，所设学科专业包括生物工程，应用化学，环境工程，机电工程，旅游管理，工商管理和法律等本科专业。学校以教学为中心，培养和提高学生学识和创新能力，为社会培养理工和人文各类专业人才。学校拥有省级重点建设学科4个，包括生物化学与分子生物学，应用化学，机电工程和工商管理，和省级人文社科基地3个。

长沙学院是一所花园式高校，校园山水相映，绿树成荫，景色宜人。学校总面积1,326,000平方米，总建筑面积350,000平方米，建有现代化的教学楼，实验楼，图书馆，体育馆以及设施齐全的学术公寓。

长沙学院是一所具有国际视野的地方高校。近年来，学校积极推进对外交流，与美国，日本，韩国，英国，加拿大，丹麦，新西南和欧洲多国开展了多种形式的交流合作，派出了200多名留学，进修和访问人员，同时邀请了近百名外国专家学者来校讲学和交流合作，并正努力拓展和深化多访问国际交流合作,联合办学和接纳外国留学生来校学习。

致谢-Acknowledgement

第四届药源生物制药国际研讨会主要VIP名单

Brian S. Blagg教授

Yao Cao （曹亚）教授

Lizhong Dai（戴立忠）博士

Ge Gao（高歌）博士

Tony Giordano博士

Hualiang Jiang（蒋华良）教授

Chunguang Liu（刘春光）总经理

Qiang Liu（刘强）教授

Liangjun Lu（陆良军）博士

Giovanni Melillo博士

Peter Seeberger教授

Cheng-Chao Shaou（寿成超）教授

Wei-Hong Tang（谭蔚泓）教授

Le Wang博士

Yuquan Wei（魏于全）院士

Yufang Xu（徐玉芳）教授

Chun-Su Yuan教授

Zachary Zhao首代

Gui-Dong Zhu博士

Xuting Cai （蔡旭艇）总经理

Ze-Neng Cheng（程泽能）教授

Maria Galasso教授

Heidi Giordano博士

P. Mark Hogarth教授

Gregory Knipp教授

Ji-Kai Liu（刘吉开）教授

Jin-Feng Luo（罗金峰）教授

Paul Mar博士

Max Meng博士

Peter Senter博士

H. Sugiyama教授

Thomas von Geldern博士

Ningling Wang博士

Xiaoyu Wang博士

Jun Yang（杨军）教授

Xiao-Kun Zhang（张晓坤）教授

Hong-Hao Zhou（周宏灏）院士

致谢-Acknowledgement

第四届药源生物制药国际研讨会组委会

主任: 曹 亚 教授、朱贵东 教授

副主任: 程泽能 教授、 黄东 副处长、 欧阳科生 教授、 周淦

会务组: 毕晓艳 （组长）、王蓉 、余艳辉 、李敏 、刘欣

接待组: 王丹（组长）、王蓉 、余艳辉 、陈琳、 易薇、 高敬鹤、唐益平

翻译组: 王璨（组长）Jimmy Co、 曾文斌、 陈传品、 李乾斌、 朱曲波、 李晓辉、吴远宁、 谢芸、 刘欣

报道组: 唐敏（组长）刘欣

对接协调组: 程泽能（组长）、张伟（组长）、李敏、翁新宪

美国组: 马武平、章海婴、陆良军、赵宏宇、赵琳、陶志福、刘雪松、王红卫、徐向东

第四届药源生物制药国际研讨会志愿者

中南大学肿瘤研究所

陈晓燕	董 欣	肖兰博	于新芳	赵璐晴	蒋逸群	李弘德
谭哲琼	刘海丹	刘小兰	钟娟芳	刘丽愉	徐志杰	徐 伞
李江江	段芝	洪丽萍	颜 彬	何小珍	陶永光	杨力芳
刘海丹	胡哲煜					

中南大学临床药理研究所

贾菲菲	罗芝英	王 瑛	肖 笛	吴娜怡园	戈孟雪	张陶蓝
张道玉	秦崇臻	景 贤	田莹莹	陈 娟	屈 健	房 超
龚卫静	陈 娟	屈 健	房 超	龚卫静		

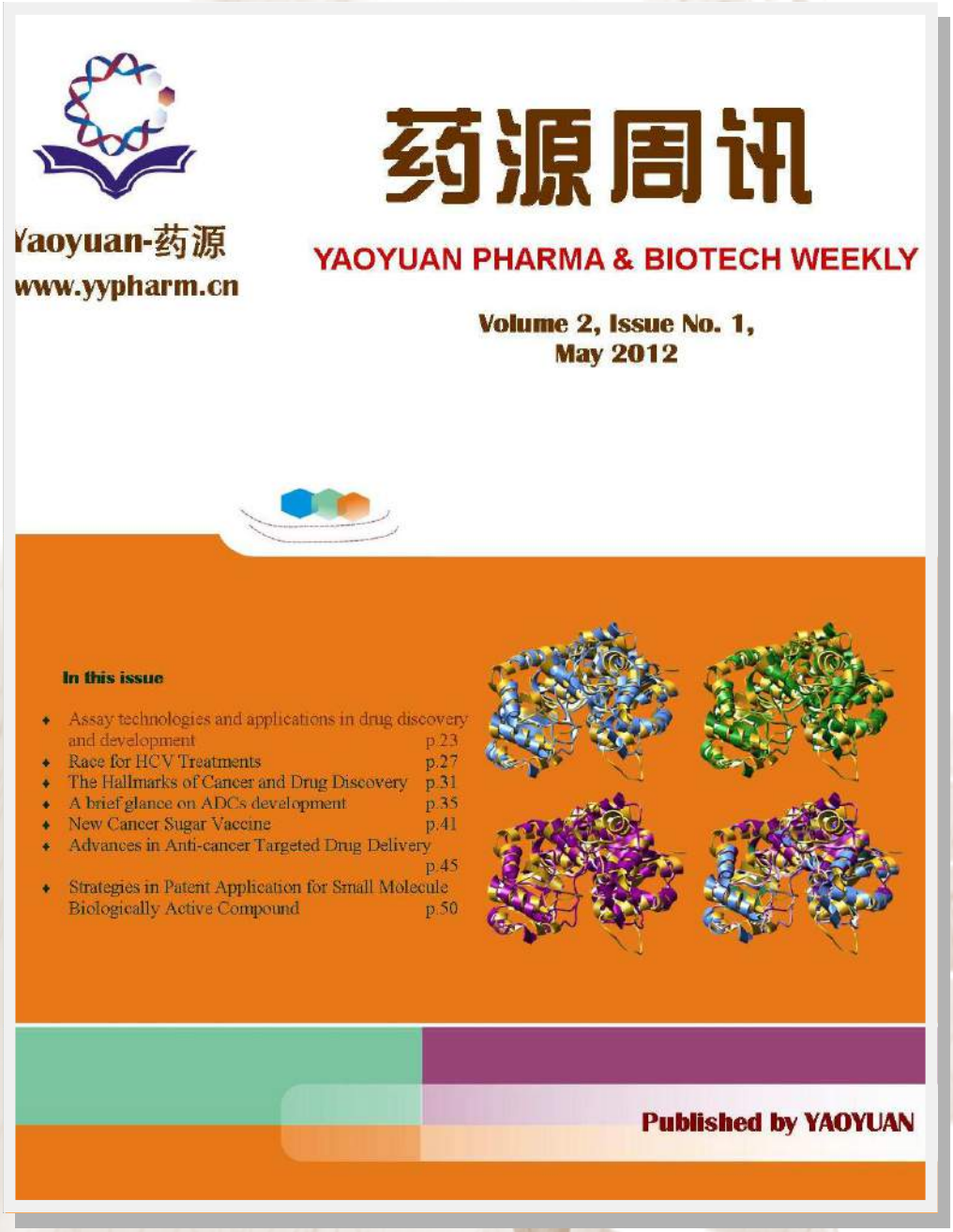
中南大学药学院

陈传品	李乾斌	朱曲波	李晓辉	姚 磊	王思颖	于 淼
吴月寒	祝田田	谢非凡	邝俊维	黄 洁	刘 莉	吕伊莎
陈 怡						

美中药源—A Yao Yuan Publication

在如今的网络时代，所有新闻可以在瞬间传播到世界每一个角落。信息革命的积极作用是所有人都可以看到大量业内的新闻，副作用是大家每天看到太多的新闻。现在互联网上泥沙俱下，鱼目混杂，新药研发本身又错综复杂，中国新药刚刚起步，如果没有专业人士挑选，解读，很多人无法判断哪些新闻真正有价值，哪些可以信赖，这些新闻背后的商机，尤其是对中国企业的机会是什么。药源和嘉兴科技园、中南大学合作，创建《美中药源》专业网站以填补这个空白。《美中药源》希望成为中国生物及制药领域的企业、学校和科研院所睁眼看世界的窗口。制药企业能在这个平台上找到所需的资讯，技术，人才，产品，和商机。专业人才能在这里学到西方的先进技术和经验。学生和年轻一代的科研人员可以在这里学到博大精深的新药研发技巧。最后，也希望我们的咨询和分析能为药监部门制定政策提供一些技术支持。

药源周讯—A Yao Yuan Publication



新药研发不同于其它行业。很多新闻报导具有很大的误导性。首先，很多进展的潜在作用被夸大了，比如一个可以缩小小鼠肿瘤的化合物和能治疗癌症病人的药物还有十万八千里，但经常被描述成抗癌药物的革命性进展。其次，很多所谓进展是假阳性，只有深入分析辅助证据才能判断这些结果的可靠性。第三，潜在的机会都在细节里，而新闻报道大多不报道关键细节。比如最近抗癌新药Enzalunamid在晚期前列腺癌的治疗取得重要进展并在八月底被FDA批准上市。但只有仔细研究这个药物的背景和临床实验结果才能知道它的溶解度和选择性很差，并能通过血脑屏障而导致病人惊厥，为进一步的改进提供重要线索。最后，现在制药行业正处于波动期，很多貌似偶然的动向其实是有深刻的行业背景的。为什么大药厂都远离暴利的大众疾病而转向专科疾病？是他们对大众疾病失去信心了还是有更深层计划？大分子药物越来越时尚但它是否能撑起整个制药工业？越来越多的大学研究所在资源贫乏的情况下做出首创药物，原因何在？所有这些对中国企业意味什么？机会在哪里？《药源周迅》把每周的关键新闻放在大背景下解析，让您了解其真正含义。并按时送到每个注册会员的邮箱。

政府、企业、高校以及科研院所的合力

药源周讯—A Yao Yuan Publication

药源周讯—A Yao Yuan Publication

第2卷2012年10月21-28日

2012年10月21日

【新闻事件】： 欧洲药监机构EMA今天建议批准Novo Nordisk 的超长效胰岛素Tresiba (degludec) 并估计会在两个月内正式批准该产品上市。Tresiba已经于上个月在日本上市。美国在推迟几次后计划在11月8日讨论该产品的上市问题。每剂Tresiba可保持>42小时有效因此只需每周注射3次。Tresiba低血糖事件（11.1次/人/年）少于市场领导者Sanofi的Lantus（13.6次/人/年）。Tresiba预计峰值销售为2025年的9亿美元/年。Novo Nordisk以前曾推出长效胰岛素Levemir，但销售不好。目前Sanofi的Lantus占有世界长效胰岛素市场的80%份额，去年销售50亿美元。

【相关事实】：

- 胰岛素是人类药物史上真正的奇迹之一。20年代一型糖尿病人住在50人的大病房里，医生依次给这些在死亡线上挣扎的儿童注射胰岛素，当注射到最后的几个孩子时，最先用药的小患者已经从糖尿病昏迷中苏醒。曾几何时，新药研发是十分受社会尊重的职业。
- 1994年另一个重要的代谢激素Leptin被发现，人们曾以为Leptin会像胰岛素治疗糖尿病一样治疗肥胖症，但临床效果令人失望。
- 2007年辉瑞推出吸入式胰岛素Exubera并预计其峰值销售会达到30亿美元/年。九个月后辉瑞停止了Exubera的销售。其间Exubera只卖了1200万美元。辉瑞花了28亿美元开发Exubera。
- 1965年中国科学家首次化学合成牛胰岛素。困难时期的了不起成就！

【药源解析】： 胰岛素于1922年首次使用，是最老的生物药物之一。90年后的今天还有人做它的类似物令人深思。一个主要原因是所有一型糖尿病患者需要终身使用胰岛素，二型糖尿病患者绝大多数最后会胰腺beta细胞失效而必须使用胰岛素。二是胰岛素注射对患者是个负担虽然测试血糖是更大的负担。三是口服降糖药物现在还不能维持beta细胞功能。最后，胰岛素十分安全。胰岛素的故事一方面说明“无论世界潮流如何变化，好药依旧风流”，另一方面也说明注射药物在慢性病治疗中的尴尬处境。90年的努力不过是为了减少注射频率。除非小分子药物能即增加胰岛素灵敏度，有能维持beta细胞功能，寻求更方便胰岛素的努力不会停止。

【未来影响】： 药源认为以胰岛素为先导物的“me-too”研发进行了90年说明好药的深度开发具有很大吸引力。很多企业只跟踪热门新靶点，但需要注意的是老药深度开发的机会。另一个成功例子是是普渡药业的oxycodone。这个药1916年首度上市，但普渡80年后的新剂型使这个老药变成一个30亿美元/年的产品。这些胰岛素类似物也会成为现在正在形成的 “生物仿制药” 产业的原形，估计以后很多生物大分子仿制药会效仿胰岛素的研发模式。至于胰岛素本身，药源认为非侵入性胰岛素会成为未来的方向。虽然Exubera商业上不成功，还有一些吸入式胰岛素在研发中，其中以Mankind的产品最有希望。

2012年10月22日

【新闻事件】： 今天辉瑞宣布以接近7亿美元收购Next Wave（包括以后的里程金），主要是为了哌甲酯（利他林）长效液体制剂，Quillivant XR，这个产品。利他林是最老的ADHD（attention deficit hyperactivity disorder，儿童多动症）药物之一，而Quillivant XR则是美国批准的第一个一日一次ADHD液体制剂。该产品预计2013年1月上市销售。辉瑞成熟产品总裁Albert Bourla说这次收购表明辉瑞会继续扩张成熟产品已使自己产品多元化。如果不出意外，收购将会在今年第四季度完成。

【相关事实】：

- J&J 的Concerta和Shire的Intuniv 也是治疗ADHD的老药新剂型。
- 3-5%的儿童患有ADHD，这些患者中有30-50%成人后还有症状。
- 辉瑞是制药界有名的购物狂。先后在1999年以900亿美元收购了Warner Lambert，2002年以600亿美元收购了Pharmacia，和 2009年以680亿美元收购了惠氏。现在的辉瑞是AH Robins, American Cynamid, American Home Products, Warner Lambert, Monsanto, Searle, Pharmacia, Upjohn，和Wyeth 的混合而上面这些公司本身又是不少更小公司的组合。

Driven by passion. Committed to life.

We at Takeda have always been driven by passion: the passion to build a healthier society. For over 230 years, our core principles have guided us through a world of constant changes ensuring that we always act with integrity, always putting people first.

Today we are truly global, contributing to better health for millions of patients around the world. Takeda is dedicated to pharmaceutical innovation, tackling diseases for which there is currently no cure and expanding into new fields of treatment and therapy. Our commitment is to improve the quality of the most precious thing we know: life.