

浦江创新观察

Pujiang Innovation Observation

2024-15

2024-15

（总第 15 期）

(Issue 15 overall)

上海浦江创新论坛中心

2024 年 9 月 10 日

Shanghai Pujiang Innovation Forum Center

September 10, 2024

编者按：2024浦江创新论坛——中国-匈牙利分论坛上，来自中匈两国各领域的专家学者围绕医疗产业创新、科技创新能力提升和中西医创新合作等角度展开深入研讨。本期专报对中国-匈牙利分论坛的嘉宾观点进行梳理，供参考。

Editor's note: At the 2024 Pujiang Innovation Forum – the China-Hungary Sub-forum, experts and scholars from various fields in China and Hungary conducted in-depth discussions on medical industry innovation, technological innovation capability enhancement, and innovation cooperation on Western and traditional Chinese medicine, etc. This special report synthesizes the viewpoints of the guests at the China-Hungary Sub-forum for your information.

2024 浦江创新论坛专报之八

Special Report 8 of the 2024 Pujiang Innovation Forum

全面提升中匈医疗健康合作与融合创新能级

Comprehensively Enhance the Innovation Level of Medical and Health Cooperation and Integration Between China and Hungary

今年是中国与匈牙利建交 75 周年，两国领导人正式宣布中匈关系提升为新时代全天候全面战略伙伴关系。中匈双方均高度重视人民健康福祉，匈牙利也是欧洲首个为中医药立法的国家，支持中医药在匈牙利及中东欧地区的推广应用。与会嘉宾一致认为，传统医学与现代医疗相结合是未来医学发展的必然方向，两国在基础研究、产学研协同等方面已有深厚共识和合作基础，未来应进一步加深了解、深化交流，全面提升创新合作能级。

This year marks the 75th anniversary of the establishment of diplomatic relations between China and Hungary, and the leaders of the two countries have officially announced that the China-Hungary relationship is upgraded to a comprehensive strategic partnership for all-round cooperation in the new era. Both China and Hungary attach great importance to the health and well-being of their peoples, and Hungary is also the first country in Europe to legislate on traditional Chinese medicine, supporting the promotion and

application of traditional Chinese medicine in Hungary and Central and Eastern Europe. **The guests present unanimously agreed that the combination of traditional medicine and modern medicine is an inevitable direction for the future development of medicine. The two countries have a deep consensus and cooperation foundation in basic research and industry-university-research collaboration. In the future, they should further deepen their understanding and exchanges, and comprehensively enhance the level of innovation cooperation.**

一、传统医学与现代医疗融合创新是中匈医疗健康合作的关键契合点

1. The integration and innovation of traditional and modern medicine is a key conjunction point for medical and health cooperation between China and Hungary

结合医学作为未来学科，是从分析向综合回归的过程，是东西方医学汇聚的新医学。病症结合医学模式，将对生命科学的认知、医学模式转变以及全球健康发展产生根本影响。上海中医药大学校长季光以非酒精性脂肪肝为例指出，十年前传统中医循证医学研究中发现了新靶点 THR- β ，并以此研制了苓桂术甘颗粒，对比十年后以 THR- β 为靶点治疗脂肪性肝炎的靶向中西药，传统中医的临床试验能帮助现代医学获取发现不了的治疗靶标，提供现代医学不能提供的治疗手段。上海中医药大学附属曙光医院副

院长元唯安指出，美国耶鲁大学在临床研究中引入中药，解决了肝癌治疗中的耐药性问题，展示了中西医结合治疗的有效性。中医和西医虽然基础理论有区别，但目标都是治疗疾病提升健康。中医发展可为现代医学提供良好思路，现代医学对解释中药有效性也非常重要，两者融合发展、相互促进。

Integrative medicine as a future discipline is a process of regression from analysis to synthesis, and it is a new medicine that combines Eastern and Western medicine. The medical model of combining disease and syndrome will have a fundamental impact on the understanding of life sciences, the transformation of medical models, and the development of global health. Taking non-alcoholic fatty liver disease as an example, **Ji Guang, President of Shanghai University of Traditional Chinese Medicine**, pointed out that ten years ago, a new target THR- β was discovered in evidence-based traditional Chinese medicine research, and based on this, Linggui Zhugan Granules were developed. Compared with targeted traditional Chinese and Western medicine that use THR- β as a target to treat steatohepatitis ten years later, clinical trials of traditional Chinese medicine can help modern medicine obtain treatment targets that modern medicine cannot discover, and provide treatment methods that modern medicine cannot provide. **Yuan Wei'an, Vice President of the Shuguang Hospital Affiliated with Shanghai University of Traditional Chinese Medicine**, pointed out that Yale

University in the United States has introduced traditional Chinese medicine in clinical research, which has solved the problem of drug resistance in the treatment of liver cancer and demonstrated the effectiveness of integrated traditional Chinese and Western medicine treatment. Although there are differences in basic theories between traditional Chinese medicine and Western medicine, both aim to treat diseases and improve health. The development of traditional Chinese medicine can provide good ideas for modern medicine, while modern medicine is also very important in explaining the effectiveness of traditional Chinese medicine. The two can achieve integrated development and mutual reinforcement.

二、中匈医疗健康合作基础扎实、未来前景广阔

2. The foundation for medical and health cooperation between China and Hungary is solid, and the future prospects are broad

一是中匈在中药新药创制领域基础研究合作的知识共识广泛、平台基础扎实。匈牙利谚语“你可以在树林中找到治病的食材”与中医药文化中药食同源的理念不谋而合。德布勒森大学副校长卡罗伊·派特强调，该校高度关注草药研究与发展，开展了植物代谢组学、植物生物活性物质定量分析方法开发、植物微生物组研究等工作，形成了菩提树的多酚含量、辣根的内生真菌研究、浒苔的抗菌特性、茴香的药理作用、酸樱桃籽提取物的抗氧

化特性等系列成果。上海中医药大学中药学院院长张彤指出，中国在中医药现代化方面取得了重大进展，建立了涵盖多层面的质量控制体系，确保从种植、采集、加工到生产每一个环节，都能满足高标准的质量要求，保障了中医药的安全性、有效性和可控性，为中医药的全球推广应用奠定了坚实基础。中国科学院上海药物研究所党委书记、副所长叶阳指出，上海药物研究所精心构建了基于传统草药进行新型药物发现的技术集成平台，该平台通过整合高通量筛选技术，成功建立了旨在发现具有抗病毒活性化合物的库，为中药现代化和国际化研究提供了强有力技术支持。

Firstly, there are broad knowledge consensus and solid platform foundation for basic research cooperation between China and Hungary in the field of creating new traditional Chinese medicine. The Hungarian proverb that "you can find ingredients for treating diseases in the woods" coincides with the idea of "food and medicine coming from the same source" in traditional Chinese medicine culture. **Pető Károly, Vice President of the University of Debrecen,** emphasized that the University of Debrecen attaches great importance to the research and development of herbal medicine, and has conducted research work on plant metabolomics, development of quantitative analysis methods for plant bioactive substances, and plant microbiome, resulting in a series of achievements such as the polyphenol content of pipal tree, endophytic fungi research of horseradish, antibacterial properties of

Enteromorpha prolifera, pharmacological effects of fennel, and antioxidant properties of sour cherry seed extract. **Zhang Tong, Dean of the School of Traditional Chinese Medicine at Shanghai University of Traditional Chinese Medicine**, pointed out that China has made significant progress in the modernization of traditional Chinese medicine, and established the quality control system covering multiple levels, to ensure that every link from planting, collection and processing to production can meet high quality requirements, thus safeguarding the safety, effectiveness and controllability of traditional Chinese medicine, and laying a solid foundation for the global promotion and application of traditional Chinese medicine. **Ye Yang, Secretary of the Party Committee and Deputy Director of the Shanghai Institute of Materia Medica at the Chinese Academy of Sciences**, pointed out that Shanghai Institute of Materia Medica has carefully constructed a technology integration platform for discovering new medicine based on traditional herbs. Through integrating high-throughput screening technology, the platform has successfully established the bank aimed at discovering antiviral active compounds, providing strong technical support for the modernization and internationalization of traditional Chinese medicine.

二是中匈均重视医疗健康产学研生态体系建设,积累了丰富的合作经验。目前,塞梅尔维斯大学与复旦大学,欧布达大学与

清华大学、哈尔滨工业大学已开展了深入合作，为未来更广泛合作奠定了坚实基础。塞梅尔维斯大学科学创新副校长彼得·埃莱梅尔·费迪南迪强调，学校推进教育、研发与医疗实践于一体，加强临床研发数据和生物基因库等基础科研资源建设，建立临床药物研发中心，推动科学研究与应用转化，构建卓越科研生态。布达佩斯技术与经济大学校长哈桑·谢拉夫指出，学校借鉴美国麻省理工学院模式，定期举办商业早餐会，与行业参与者建立联系，构建促进学术界与工业界合作的知识交流平台。匈牙利布达佩斯罗兰大学科学学院院长伊姆雷·考奇科维奇提到，学校与匈牙利多家制药企业集团建立了深入合作关系，这种合作模式不仅满足科研需求，也符合制药公司的特定要求，通过共同研发来应对行业挑战。季光强调，上海已初步构建起中医药国际标准化高地，发布了 114 项中医药国际标准，为全球中医药发展做出了积极贡献，始终以开放的姿态欢迎国际中医药界的交流合作。

Secondly, both China and Hungary attach great importance to the construction of the medical and health industry-university-research ecosystem, and have accumulated rich cooperation experience. Up to now, in-depth cooperation has been conducted between Semmelweis University and Fudan University, as well as between Óbuda University and Tsinghua University and Harbin Institute of Technology, laying a solid foundation for broader cooperation in the future. **Péter Elemel Ferdinandy, Vice President of Science and Innovations at**

Semmelweis University, emphasized that Semmelweis University promotes the integration of education, research & development and medical practice, strengthens the construction of basic scientific research resources such as clinical research and development data and biological gene banks, establishes the clinical drug research and development center, promotes the transformation of scientific research and application, and builds an excellent scientific research ecosystem. **Hassan Charaf, President of the Budapest University of Technology and Economics (BME)**, pointed out that the (BME) draws on the model of the Massachusetts Institute of Technology in the United States, and regularly holds business breakfast meetings, for the purpose of establishing connections with industry players and building a knowledge exchange platform that promotes cooperation between academia and industry. **Imre Kacskovics, Dean of the Faculty of Science of the Eötvös Loránd University (ELTE) in Budapest, Hungary**, mentioned that the ELTE has established deep cooperative relationships with multiple pharmaceutical enterprise groups in Hungary. This cooperation model not only meets scientific research needs, but also meets the specific requirements of pharmaceutical companies, addressing industry challenges through joint research and development. **Ji Guang** emphasized that Shanghai has initially established the international standardization highland for traditional Chinese medicine, and issued 114 international

standards for traditional Chinese medicine, making positive contributions to the global development of traditional Chinese medicine; and that Shanghai always welcomes exchanges and cooperation in the international traditional Chinese medicine community with an open attitude.

三是聚焦未来发展需求，从互动机制、人才交流、项目合作等方面全面深化中匈医疗健康领域务实合作上。2019年，世界卫生组织在《国际疾病分类第十一次修订本（ICD-11）》中首次纳入中医药章节，标志着全球对中医药医学价值的广泛认可。张彤提出，匈牙利在中医药领域的立法以及欧盟的《欧盟传统草药指令》，为传统中成药在欧盟市场注册提供了明确指导，对中医药国际化发展具有重要意义。希望未来能与匈牙利深化合作，推动更多中草药药物在欧盟获批上市。面向未来，复旦大学附属肿瘤医院药剂科主任刘继勇、潘诺尼亚大学研发中心主管伊尔迪科·格拉姆波斯、Bio Talentum Ltd.联合创始人兼总监安德拉什·丁涅什、吉瑞制药创新及招标主管西拉德·佩尔奇等一致提出：中匈两国应建立更加紧密、畅通和灵活的中西医交流机制，聚焦双方在医疗健康领域的发展需求，高校和研究机构之间互派医生和留学生，共同启动系列中匈国际合作项目，促进全球传统与现代医疗的融合创新。

Thirdly, we should focus on future development needs, and comprehensively deepen practical cooperation between China and Hungary in the field of medical and health from the aspects

of interactive mechanisms, talent exchange and project cooperation. In 2019, the World Health Organization included a chapter on traditional Chinese medicine for the first time in the 11th revision of the International Classification of Diseases (ICD-11), marking the widespread recognition of the medical value of traditional Chinese medicine worldwide. **Zhang Tong** proposed that Hungary's legislation in the field of traditional Chinese medicine and the European Directive on Traditional Herbal Medicinal Products (THMPD) provides clear guidance for the registration of traditional proprietary Chinese medicines in the EU market, which is of great significance to the international development of traditional Chinese medicine. We hope to deepen cooperation with Hungary in the future and promote more Chinese herbal medicines to be granted marketing approval by the European Union. Looking ahead, **Liu Jiyong, Director of the Department of Pharmacy at Fudan University Shanghai Cancer Center (FUSCC); Ildiko Galambos, Head of the R&D Center at the University of Pannonia; Andras Dinnyes, Co-founder and Director of Bio Talentum Ltd.; and Silad Perch, Head of Innovation and Tendering at Gedeon Richter Plc.,** unanimously proposed that China and Hungary should establish a closer, smoother, and more flexible mechanism for the exchange of traditional Chinese and Western medicine; focusing on the development needs of both sides in the field of healthcare,

universities and research institutions should exchange doctors and international students, jointly launch a series of China-Hungary international cooperation projects, and promote the integration and innovation of traditional and modern medicine worldwide.

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