

# Research on the exploration of the path of building a strong city of traditional Chinese medicine in Foshan

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**Abstract:** Chinese medicine is a great creation of the Chinese nation and has had a positive impact on the progress of world civilization. This paper focuses on the advanced national and local practices on promoting the high-quality development of Chinese medicine; scientifically investigates the actual situation of the whole chain of Chinese medicine industry in Foshan, and proposes a pathway for building a strong city of Chinese medicine in Foshan with high quality, which is closely integrated with the local economic and social characteristics of Foshan.

**Keywords:** strong city of Chinese medicine, high-quality development, economy of Foshan, policy research, medical management

## 1. Introduction

Chinese medicine, the collective name for all ethnic medicine in China, has a unique diagnosis and treatment method and system of thinking relative to modern Western medicine. Chinese medicine is a great creation of the Chinese nation, which has made great contributions to the prosperity of the Chinese people and has had a positive impact on the progress of world civilization. Chinese medicine in China is profound and long-standing, not only a valuable health resource and cultural resource, but also an important ecological resource and an economic resource with great potential, and the rational use of Chinese medicine resources is of great significance to the development of Chinese medicine industry in China <sup>[1]</sup>. Foshan Chinese medicine has a long history of development, a deep cultural heritage, the formation of a number of leading Chinese medicine enterprises and fist products, but the Foshan Chinese medicine industry is still facing a series of problems, such as a leading enterprise is small, most enterprises are small, weak technology development capabilities, production processes and equipment is relatively backward, the industrial structure is not reasonable and other development bottlenecks. Compared with the advanced TCM enterprises in China, Foshan TCM still has some gaps in marketing, intelligent production, etc. Through literature research, expert consultation, statistical analysis and case study; this paper put forward suggestions for a strong TCM city in Foshan from the perspective of practical practice.

## 2. The significance of the path to a strong Chinese medicine city research in Foshan

(1) We need to actively respond the call of the national policy. The requirement of closely integrating the development of TCM with the local economic and cultural characteristics of Foshan, tracing the long history of TCM development in Foshan and summarizing the current development achievements and historical experiences will strongly promote the high-quality development of TCM and the realization of the goal of a strong TCM city in Foshan.

(2) We need to focus on people's health and well-being. With the starting and ending point of meeting the people's demand for TCM health, we analyze the imbalance between the supply side and the demand side from the perspective of the whole chain and put forward relevant suggestions, which will be more conducive to the people's enjoyment of safe, effective and convenient TCM services, continuously enhance the people's sense of well-being and security, and promote the construction of a healthy Foshan.

(3) The study of the path of building a strong city of Chinese medicine with high quality in Foshan

will produce significant value that is visible, feasible and predictable. In Foshan, there are already more than 10 Chinese medicine production enterprises and big health enterprises, on the basis of having a more complete Chinese medicine industry chain, to further promote the work of the headquarters economy of Foshan Chinese medicine enterprises and help the Chinese medicine industry to grow bigger and stronger.

### **3. Overall development of Chinese medicine industry in Foshan**

#### ***3.1. Definition of Chinese Medicine Industry***

In the new era, the top-level design of Chinese medicine development has been accelerated and improved, the policy environment has been continuously optimized, the support has been increased, and the development of Chinese medicine industry has achieved certain positive results. However, there are divergent views on the definition of TCM industry, and scholars have different opinions. According to Xue Zhao, considering from the perspective of industrial structure, the TCM industry is equivalent to a complete industrial chain, including Chinese medicine cultivation industry, Chinese medicine industry, Chinese medicine business and Chinese medicine knowledge industry<sup>[2]</sup>. According to Liqing Zhang et al, the TCM industry is a non-monolithic industrial cluster, which includes TCM agriculture, TCM industry, TCM commerce and TCM research and intellectual property, and defines it as an emerging health industry cluster with scale, standardization and normalization based on the foundation of traditional TCM, guided by TCM theory and formed by using modern science and technology and methods<sup>[3]</sup>. According to Boli Zhang, the large Chinese medicine industry is a new industrial cluster based on Chinese medicine agriculture, Chinese medicine industry as the main body, Chinese medicine knowledge economy industry as the driving force, and Chinese medicine business as the hub<sup>[4]</sup>. According to Chengshu Wu, the Chinese medicine industry, as an independent type of industry, is a primary industry that is in a parallel relationship with the agricultural farming industry and also belongs to the health industry<sup>[5]</sup>.

Based on comprehensive literature analysis, the TCM industry in this paper refers to a new type of industrial cluster based on the theoretical basis of TCM, involving TCM cultivation, processing, application, sales and operation management, including TCM agriculture, industry, knowledge economy industry, commerce and service.

#### ***3.2. The current situation and problems of the development of Chinese medicine industry in Foshan***

As the hometown of Lingnan's proprietary medicine, Foshan has a history of more than 400 years of development of Chinese medicine, known as "the birthplace of Lingnan's proprietary medicine", "the ancestor of Lingnan medicine", etc., and has significant cultural soft power advantages. At the same time, Foshan has the leading local Chinese medicine enterprises, formed the Chinese medicine service system with initial scale and the Chinese medicine medical prevention and health care service system covering urban and rural areas. The Foshan people have a high degree of recognition of TCM, and major TCM hospitals and TCM clinics are crowded, and the TCM doctors with extensive experience are hard to find. Since ancient times, Foshan people have had a culture of health care. The preference of Foshan people for Foshan proprietary Chinese medicine and the widespread use of Chinese herbs in diets have provided a broad stage for the establishment and development of various medical doctors and medicine dealers in Foshan. Until now, Foshan City Hospital of Traditional Chinese Medicine, Guangdong Integrated Traditional Chinese and Western Medicine Hospital, Dezhong Pharmaceutical, Feng Liaoxing Pharmaceutical, Yi Fang Pharmaceutical and Global Pharmaceutical have been widely acclaimed in the industry.

There are two large backbone enterprises of traditional Chinese medicine in Foshan in 2021 with a revenue scale of more than 1 billion yuan, namely Guangdong Yifang Pharmaceutical Co., Ltd. and Guangdong Global Pharmaceutical Co., Ltd. Among them, Chinese medicine formula granules of Yifang pharmaceutical has a market share of more than 30% in the domestic market. At present, 42 pharmaceutical manufacturers in Foshan City have passed GMP certification and have a number of well-known enterprises, such as the subsidiaries of China National Traditional Chinese Medicine Holdings Co., Ltd: Sinopharm Group Guangdong Global Pharmaceutical, Sinopharm Group Dezhong Pharmaceutical, Sinopharm Group Feng Liaoxing Pharmaceutical, Guangdong Yifang Pharmaceutical, as well as Lingnan Traditional Chinese Medicine Tablets, Chiral Pharma and Shunfeng Pharmaceuticals, all of which are well-known Chinese medicine and health care companies with many years of pharmaceutical history. Among the top 50 Chinese patent medicine companies in the country, Foshan

has Dezhong Pharmaceutical and Feng Liaoxing Pharmaceuticals. Guangdong Global Pharmaceutical Co., Ltd. has been recognized as a model enterprise of "Top 100 Innovative Enterprises Cultivation Project" of Guangdong Province; Guangdong Yifang Pharmaceutical Co., Ltd. is a key high-tech enterprise of National Torch Plan, National Technology Innovation Demonstration Enterprise and National Intellectual Property Advantage Enterprise.

The development of Foshan's pharmaceutical industry has always taken the route of mainly traditional Chinese medicine, based on the fine tradition of unique ancestral recipes, excellent selection of materials and exquisite craftsmanship inherited from the ancient "Foshan proprietary Chinese medicine", and has achieved greater development by obtaining GMP certification and adopting advanced equipment and modern pharmaceutical production processes. However, at present, the development of the industry still exists some places to be improved.

**(1) Insufficient government guidance, support still needs to be strengthened.**

In recent years, the overall development of Foshan's Chinese medicine industry has lagged behind and has not kept pace with the rapid economic development of Foshan. For a long time, the Foshan government has been supporting the home appliance, ceramic, machinery and equipment, new energy and other industries, thus making the Chinese medicine industry, which accounts for a relatively low proportion of the total industrial output value, benefit less from the policy. As a sunrise industry in the 21st century, the Chinese medicine industry is a low-carbon, high-tax, high-value-added industry with broad development prospects and significant development, therefore, more guidance and support is needed in terms of policies and funds. The measures taken by Foshan in introducing higher technical talents and academic leaders in the field of Chinese medicine are still inadequate, especially the awareness of enterprises in introducing scientific research talents and training talents jointly with higher education institutions is not yet strong. In terms of coordination and cooperation between industry, academia and research, the pace of Foshan's Chinese medicine enterprises is still small, and the resources of universities and research institutes are not fully utilized.

**(2) The scale of the industry needs to be improved, and industrial structure needs to be improved.**

After years of construction, although the Chinese medicine industry in Foshan has made great progress, from an overall perspective, the total industrial output value and industrial added value of pharmaceutical enterprises above the scale in Foshan City only account for 0.4% and 0.5% of the industry above the scale in Foshan City respectively, and the industrial level is still very low. There are few leading enterprises with greater influence in the industry, most of which are small in scale, weak in technology development, and relatively backward in production process and equipment. In addition, the modern management awareness of some private enterprises is relatively weak, the management is not standardized, there is a lack of sense of worry and easily satisfied mentality, lack of enterprising spirit, which also to a certain extent restricts the development of enterprises. At the same time, the industrial structure is not reasonable, most of them are manufacturing enterprises of proprietary Chinese medicines, while the proportion of enterprises related to modern Chinese medicine technology and logistics is very small.

**(3) Weak innovation awareness and insufficient investment in R&D.**

Due to the system, management and decision-making, most pharmaceutical enterprises in Foshan lack capital and human investment in new product research and development, and their innovation awareness is weak. On the one hand, only a small number of Chinese medicine enterprises in Foshan spend 1% to 3% of their annual sales on research and development of new products, which is less than 0.5% of the research and development investment of equivalent enterprises, which is extremely incompatible with the characteristics of the pharmaceutical industry requiring high technology and high investment. On the other hand, most enterprises are not highly motivated to apply new technologies, and the depth and breadth of knowledge innovation and technological innovation in the pharmaceutical industry is still not satisfactory, with a considerable number of Chinese medicine manufacturers still using the traditional production processes of many years ago. In terms of the number of granted patents, except for a few larger enterprises with a small number of patents, the vast majority of enterprises have no granted patents or have never even applied for patents. In recent years, few new drugs have been developed in Foshan City, and only one drug has obtained the registration approval of the new traditional Chinese medicine "Huashi Baidu Keli" for the treatment of COVID-19 in 2021.

**(4) The development and transmission of traditional Chinese medicine culture needs to be further improved.**

Chinese medicine culture itself is one of the core pillars of the competitiveness of the pharmaceutical industry. Using excellent Chinese medicine culture as a guide, combined with the latest achievements of modern science and technology development, will play an important role in improving the competitiveness of the Chinese medicine industry. Foshan's traditional Chinese medicine industry is a traditional industry rooted in Foshan and full of history and culture, and it is an advantageous industry that can develop Lingnan's history and culture and industrialization in a coordinated way, and the full development of Foshan's Chinese medicine culture will serve to create a Chinese medicine brand. Although Foshan has a long history of proprietary Chinese medicine, the cultural value of "Foshan proprietary Chinese medicine" has not been fully explored. The lack of inheritance of traditional Chinese medicine culture is also manifested in the insufficient efforts in the secondary development of old products. With the general recognition of Chinese medicine and natural medicine and the current expanding international demand for them, there is a huge market share at home and abroad to be occupied by modernized Chinese medicine, which brings a good opportunity for the secondary development of old products.

#### **4. Comparative analysis of national and local Chinese medicine industry and experience learning**

In recent years, China has promulgated a series of outlines and plans to support and guide the development of the TCM industry. For example, in March 2021, the Fourteenth Five Year Plan for National Economic and Social Development of the People's Republic of China and the Outline of the Vision Goals for 2035 put forward that we should adhere to the principle of attaching equal importance to traditional Chinese medicine and western medicine and complementing each other's advantages, and vigorously develop the cause of traditional Chinese medicine. In March 2022, the Fourteenth Five Year Plan for the Development of Traditional Chinese Medicine issued by the General Office of the State Council comprehensively deployed the work of traditional Chinese medicine during the Fourteenth Five Year Plan period. In April 2022, the General Office of the Ministry of Education and the Office of the State Administration of Traditional Chinese Medicine jointly issued the Notice on Carrying out the Construction of the National Demonstration Center for Clinical Teaching and Training of Traditional Chinese Medicine, which referred to further strengthening the construction of clinical practice teaching bases in Chinese medicine colleges and universities, and constantly improving the quality of training Chinese medical talents. In terms of improving the policy system, the country has issued an unprecedented number of high-profile documents in recent years, involving areas that continue to extend outward, which is sufficient to reflect the country's attention and strong support for the development of the Chinese medicine industry.

Local Party committees and governments at all levels incorporate the implementation of the Opinions of the Central Committee of the Communist Party of China and the State Council on Promoting the Inheritance, Innovation and Development of Traditional Chinese Medicine into the performance appraisal of the Party committees and governments, encourage local governments to take the lead in service mode, industrial development, quality supervision and other aspects, and strive to build a number of national demonstration areas for comprehensive reform of traditional Chinese medicine. To this end, local regions have introduced relevant policies, such as Beijing's Implementation Plan on Promoting the Inheritance, Innovation and Development of Traditional Chinese Medicine; Shanghai issued the Three Year Action Plan for Shanghai to Further Accelerate the Inheritance, Innovation and Development of Traditional Chinese Medicine (2021-2023); Shenzhen issued the Implementation Plan of Shenzhen for Promoting the Inheritance and Innovation of Traditional Chinese Medicine (2020-2025).

Through literature research, expert consultation, statistical analysis and case studies, it is found that national and local development of TCM industry has the following experience characteristics, which is worthy of reference for Foshan TCM strong city.

##### ***4.1. Providing policy support and legal protection, building and improving the management and regulatory system***

The development and prosperity of the TCM industry cannot be achieved without the support of national policies and local policies. Under the call of the central government to vigorously develop the TCM industry, various places have promulgated relevant policies for the development of TCM industry and given corresponding suggestions according to the local situation. The Beijing Municipal Party Committee and Municipal People's Government issued the Implementation Plan on Promoting the Inheritance and Innovative Development of Chinese Medicine, which proposed to strengthen the

management of Chinese herbal resources and establish a census system for Chinese herbal resources; improve the collaborative supervision mechanism for the quality of prepared slices of traditional Chinese medicine; and build a traceability system for the whole process of Chinese medicine<sup>[6]</sup>. Shanghai has put forward the Three Year Action Plan of Shanghai to Further Accelerate the Inheritance, Innovation and Development of Traditional Chinese Medicine (2021-2023), which calls for giving play to the unique advantages and role of traditional Chinese medicine, helping to build a strong public health system with the deep participation of traditional Chinese medicine, improving the emergency system of traditional Chinese medicine, and improving the emergency treatment and prevention and control capabilities of traditional Chinese medicine. Sichuan Provincial Bureau of Statistics conducted a special survey on the development process and status quo of the province's traditional Chinese medicine industry, and proposed to explore the establishment of a corresponding regulatory mechanism; Improve the medical insurance policy, actively explore and strive to include qualified medical institutions' traditional Chinese medicine preparations and traditional Chinese medicine characteristic diagnosis and treatment projects into the scope of medical insurance reimbursement on the existing basis<sup>[7]</sup>.

In terms of legal protection, the Law of the People's Republic of China on Chinese Medicine was adopted by the Standing Committee of the National People's Congress on December 25, 2016, clarifying for the first time the important status of Chinese medicine at the legal level, expressing the national will at the legal level, and providing legal protection for the development of Chinese medicine. As early as 2006, Shenzhen incorporated the Regulations on Traditional Chinese Medicine in Shenzhen Special Economic Zone into its legislative plan, which was passed by the Standing Committee of the Fourth People's Congress of Shenzhen on April 2, 2010.

#### ***4.2. Securing funding and resource support***

With the gradual development of the TCM industry in China, the availability of capital and resource investment has become one of the problems faced by the development of the industry. Beijing encourages leading TCM enterprises to create national breeding bases of good seeds of authentic herbs and supports forest herb planting projects to guarantee the adequacy and quality of TCM resources<sup>[6]</sup>. Sichuan province has proposed that appropriate financial subsidies will be given to TCM enterprises for their R&D innovation<sup>[7]</sup>. In 2018, Weifang launched the "Classic TCM 1000 Talents Training Project", with an investment of 5 million yuan, and plans to cultivate 2000 high-quality TCM talents within three years<sup>[8]</sup>.

#### ***4.3. Focusing on inheritance, strengthening the training of TCM talents and building a platform for talent exchange***

China has always attached importance to and supported the planning and construction of TCM colleges and universities to build a platform for training more high-quality TCM talents. During the 1950s and 1960s, our government began to develop the TCM industry, establishing 20 TCM schools and 143 TCM refresher courses nationwide. Now there are 24 provinces and cities in China with TCM universities or TCM schools, such as Beijing University of Chinese Medicine, Guangzhou University of Chinese Medicine, Shanghai University of Chinese Medicine, Nanjing University of Chinese Medicine, Guizhou University of Chinese Medicine, Shandong University of Chinese Medicine, etc. Other provinces and cities with TCM universities are Changchun, Heilongjiang, Tianjin, Shanxi, Liaoning, Chengdu, Anhui, Henan, Hubei, Hunan, Zhejiang, Fujian, Jiangxi, Guangxi, Yunnan, Shaanxi and Gansu.

Yang Zhimin, vice president of Guangdong Provincial Hospital of Traditional Chinese Medicine, mentioned in an interview that TCM inheritance and innovation require a certain talent base, and contemporary TCM talents are mainly divided into three categories: the first category is college-level talents who can integrate Chinese and Western medicine; the second category is TCM science and technology-based talents; and the third category is TCM talents with clinical competence<sup>[9]</sup>. In terms of talent training, in the "Three Year Action Plan of Shanghai to Further Accelerate the Inheritance, Innovation and Development of Traditional Chinese Medicine (2021-2023)", Shanghai not only docked with the national "ten million" talent project of traditional Chinese medicine, but also built a high-level talent team of traditional Chinese medicine; We also attach importance to strengthening discipline construction and cultivating world-class scientific and technological journals of Chinese medicine. Beijing emphasizes talent support for the TCM health industry and promotes the establishment of a TCM health service vocational skills training system; encourages TCM health service institutions to establish technical skills positions and improve the management system for TCM skills positions<sup>[6]</sup>. Based on the current situation of its health industry talents, Mianyang City has supported the cooperation between

colleges and universities in Sichuan Province and famous medical schools in China by adopting co-organization and introduction; accelerating the development of a positive interaction between talent chain, industry chain and innovation chain <sup>[10]</sup>. In the Plan for Accelerating the Development of Traditional Chinese Medicine in Tianjin, Tianjin proposed that Tianjin University of Traditional Chinese Medicine, Tianjin Medical University and Tianjin Medical College would explore the mechanism of traditional Chinese medicine education and personnel training; The first national key laboratory of the Chinese medicine system was established in Tianjin, and 3 national key laboratories of Chinese medicine and 10 municipal key laboratories were established <sup>[11]</sup>.

#### ***4.4. Fully inheriting and carrying forward the excellent Chinese medicine cultural resources, and strengthening the propaganda and promotion***

Chinese medicine culture is the treasure of Chinese traditional culture, and how to inherit and carry forward the excellent Chinese medicine cultural resources is a key concern for the further development of Chinese medicine industry. Based on the vigorous development of TCM healing tourism, Hangzhou has formed a unique TCM health culture industry pattern by driving the industry with culture <sup>[12]</sup>. Henan Province, with the construction of Henan University of Traditional Chinese Medicine library as a practical exploration, actively play the function of cultural heritage innovation, and established a rich and characteristic collection system and innovative management services to provide a strong guarantee for the cultural heritage of Chinese medicine <sup>[13]</sup>.

#### ***4.5. Charting a course of innovative development to guide the further development of the TCM industry***

After the great development of Chinese medicine industry, exploring innovative development path and innovative development mode is the way to further development of Chinese medicine industry. There are more than 1.4 million TCM health care service enterprises of different scales in China, and more than 3 million related chain industries, with an annual output value of about 200 billion yuan and about 30 million employees. Guangzhou Pharmaceutical Group Co., Ltd. ranked first in the list of top 100 Chinese traditional medicine enterprises in 2019, followed by Buchang Pharmaceutical and China Resources Sanjiu Pharmaceutical Co., Ltd., and the top ten enterprises were also Tianshili Pharmaceutical Group Co., Ltd., China Traditional Chinese Medicine Holding Co., Ltd., Yunnan Baiyao Group Co., Ltd., Beijing Tongrentang Co., Ltd., Jichuan Pharmaceutical Group Co., Ltd. Zhejiang Kang'enbei Pharmaceutical Co., Ltd., Shijiazhuang Yiling Pharmaceutical Co., Ltd.

Mianyang City takes the path of promoting the integration of the big health industry with different industries: integration with the healthy city to force the improvement of city functions and realize the development for the benefit of the people by industrial development; integration with the construction of science and technology city to vigorously develop nuclear medicine drugs, nuclear medical equipment and medical electronic equipment; integration with the health service industry to promote the health manufacturing industry to the high-end of the value chain by the health service industry <sup>[10]</sup>. By forming an alliance of modern Chinese medicine "industry, academia, and research", Binhai New Area of Tianjin accelerates the research and development and industrialization of Chinese medicine varieties by promoting the development with projects; builds new research centers and technology platforms around the research and development and industrialization of new drugs, such as the Sino-Italian Joint Laboratory on Traditional Chinese Medicine, Tianjin modern Chinese medicine quality inspection center, and Tianjin component Chinese medicine technology engineering center; and builds modern Chinese medicine enterprise groups with enterprises as the main innovation body <sup>[14]</sup>.

### **5. Suggestions on the way to build a strong city of traditional Chinese medicine in Foshan**

In the research, we firmly grasp the basic framework of "inheriting the essence, keeping the righteousness and innovation, modernizing and industrializing, going global, giving equal importance to the coordinated development of Chinese and Western medicine, speaking clearly and explaining clearly, and taking the lead in modernizing the governance system and capacity of Chinese medicine". Drawing on the advanced practices of national and local high-quality development of Chinese medicine strong city, it analyzes the elements of the whole industrial chain of Chinese medicine in Foshan, the matching of the demand side of market consumption with the high-quality supply side and other core issues through empirical. The following paths are proposed for building a strong TCM city in Foshan:

### ***5.1. Further promoting the work of headquarters economy of Chinese medicine enterprises and deepening the implementation of the Chinese medicine industry to make it bigger and stronger***

China Traditional Chinese Medicine Holdings Limited is the core segment of the Chinese medicine platform of China National Pharmaceutical Group, which has the background of a central enterprise and is also a model of headquarters economy of Chinese medicine enterprises in Foshan City, which has more than 10 Chinese medicine manufacturers and big health enterprises in Foshan City and has a more complete Chinese medicine industry chain. Subsidiaries of China Traditional Chinese Medicine Holdings Limited such as Guangdong Yifang Pharmaceutical, Foshan Dezhong Pharmaceutical, Foshan Feng Liaoxing Pharmaceutical and Guang Dong Global Pharmaceutical Co., Ltd. are all excellent enterprises in the city, which can further support the Foshan sub-companies to become bigger and stronger with the support and leadership of the headquarters economy, thus further promoting the exemplary headquarters economy in Foshan.

### ***5.2. Helping Chinese medicine inherit its essence and keeping the righteousness and innovation***

Traditional Chinese medicine formula granules are granules single Chinese herbal beverage through water extraction, separation, concentration, drying and granulation. Under the guidance of traditional Chinese medicine theory, they are prepared according to the clinical prescriptions of traditional Chinese medicine and then used by patients. The quality supervision of Chinese herbal formula granules is included in the management of Chinese herbal decoction pieces. It follows the four different medicinal properties of Chinese medicine: cold, hot, warm and cool, and the five different medicinal flavors of sour, bitter, sweet, pungent and salty, as well as the four different tendencies of drug action on the organism: upward, downward, outward and inward, following the holistic concept of Chinese medicine, treating with evidence, and inheriting the basic theory of Chinese medicine. As a product of modernization of Chinese medicine, the purpose of research and development of it is not a comprehensive replacement of TCM tablets, but a progress of TCM to adapt to the needs of modern society, a supplement to traditional TCM tablets and a clinical choice.

### ***5.3. The implementation of independent innovation strategy for Chinese medicine industry***

Guided by the scientific concept of development, modern science and technology as a means to develop innovative drugs with a clear material basis, clear mechanism of action, safety and effectiveness, controllable quality, unique and independent intellectual property rights based on the characteristics and advantages of Foshan in traditional Chinese patent medicine industry, several pharmaceutical enterprises in Foshan City have national new drugs under development. The main enterprises have formed an independent innovation system with enterprises as the main body of innovation, market-oriented, product-oriented, and supported by the combination of industry, academia and research. The direction of innovative research will take advantage of the company's existing strengths and focus on creating different areas. First, the development of classical Chinese medicine prescriptions (classical Chinese medicine prescriptions refer to the prescriptions recorded in the medical books of the Qing Dynasty and before the Qing Dynasty that are still widely used, have definite clinical efficacy, and have obvious characteristics and advantages), is a variety of Chinese medicine with high efficacy, clear pharmacological effects, low toxicity, and strict and controllable quality standards developed by inheriting traditional prescriptions, using traditional Chinese medicine theory and modern Chinese medicine preparation technology.

### ***5.4. Starting the secondary development strategy of famous and high-quality products***

We support medical research based on clinical efficacy, elucidate the material basis and mechanism of action of existing products, explore the potential advantages of existing products, adopt the latest achievements of new theories, new concepts and new technologies, and carry out secondary development of the original proprietary Chinese medicine products: Fengliaoqing Fengshi Dieda Yaojiu, Jiehong Dieda Ding, Qiye Shen'an Pian, Yupingfeng Keli, etc., to improve product quality, explore the key pharmacological and medicinal effects of Chinese medicine products, etc., so as to make the old products safer and more effective.

### ***5.5. Implementing key generic technology innovation strategy***

With the support of industrial policies, we integrate various advantageous resources, adopt various

modern technologies and strive to break through the key technologies of pharmaceutical development, such as: high-efficiency membrane separation and concentration equipment technology for Chinese medicine extracts, continuous vacuum low-temperature drying equipment technology for Chinese medicine extracts, advanced tablet coating technology, etc., to achieve a sustainable development model in which the development of enterprises themselves and the development of drug modernization are coordinated, and transform key innovative technologies into productivity, promote the technological progress of the industry, improve the core competitiveness of the industry, and make the key technologies of the industry reach the advanced level at home and abroad, providing strong support for the development of the industry. Based on the pharmaceutical production enterprises in Foshan City, a number of Foshan City-level and Guangdong provincial-level technology research and development centers have been established and improved: Guangdong Traditional Chinese Medicine Engineering Technology Research and Development Center (Global Pharmaceutical), Foshan New Drug Formulation Engineering Technology Research and Development Center (Global Pharmaceutical), Foshan Traditional Chinese Medicine Secondary Development Engineering Technology Research and Development Center (Feng Liaoxing Pharmaceutical), Foshan Traditional Chinese Medicine Development and Production Engineering Technology Research and Development Center (Dezhong Pharmaceutical), Guangdong External Medicine Engineering Technology Research and Development Center (Shunfeng Pharmaceutical), Guangdong Traditional Chinese Medicine Formulation Granules Engineering Technology Research and Development Center (Yifang Pharmaceutical).

#### ***5.6. Carrying out the strategy of innovative intellectual property protection***

Innovate the mode of intellectual property protection, adopt the combination of patent protection and administrative protection, strengthen the protection of innovative products and technologies, use the industry's advanced technology platform, rich intellectual resources, track the international advanced level, participate in the formulation of national technical standards and industry standards, form technical barriers, so that innovative products are protected by technology to a certain extent, thus forming a trinity strategic mode of intellectual property protection.

#### ***5.7. Beginning the strategy of industrial park platform construction***

The industrial park is an important carrier of a city with strong industry. It adheres to the standard of "high starting point planning, high level construction, and efficient management" to build a modern industrial park, so as to drive Foshan's pharmaceutical industry to a higher scale, grade, and level, and to create a new industrial development path with high scientific and technological content, good economic benefits, low resource consumption, less environmental pollution, and full play of human resource advantages. The Opinions on the Implementation of Industrial (Science and Technology) Park Development in Foshan City put forward a number of measures and preferential policies to promote the development of industrial parks, providing policy support for the construction of modern industrial parks, promoting the intensive development of the pharmaceutical industry in Foshan City and introducing large domestic and foreign pharmaceutical enterprises. At present, many of China's chemical raw materials have formed a large-scale production capacity, many of these products have been in the international pharmaceutical products market among the top. Based on considerations such as reducing manufacturing costs and expanding sales markets, some multinational companies have set up factories in China to seek cooperation in transferring production. We should seize this opportunity to accelerate the planning and construction of the pharmaceutical and biological park from various aspects such as policy, investment environment, talents, information, technical services and supporting public facilities, increase investment attraction, attract a number of well-known large multinational pharmaceutical enterprise groups and high-tech pharmaceutical enterprises; promote new industrial clusters, attract famous domestic universities, research institutes, overseas intellectual resources to set up R & D institutions, conduct scientific and technological entrepreneurship, develop the Foshan Pharmaceutical and Biological Park into a first-class domestic pharmaceutical industry production and R & D base, and promote the gradual development and growth of the pharmaceutical industry.

#### ***5.8. Following the whole chain development strategy of traditional Chinese medicine***

Foshan's Chinese medicine manufacturers have a long history and have certain strengths in their domestic counterparts, such as Dezhong Pharmaceutical and Feng Liaoxing Pharmaceutical, both of which are among the top 50 key enterprises in the national proprietary Chinese medicine industry. In recent years, Guangdong Yifang Pharmaceutical Co., Ltd., engaged in the research and development of



traditional Chinese medicine formula granules, has adopted new technologies to develop traditional Chinese medicine formula granules. It has made remarkable achievements in improving the scientific and technological content and internal quality of traditional Chinese medicine, and its products have accounted for 40% of the domestic and foreign markets. We should seize the new round of development opportunities, vigorously develop the traditional pharmaceutical industry, increase scientific research on the production of proprietary Chinese medicines, guide and support the creation of a modern Chinese medicine industry chain, further promote the development of pharmaceutical enterprises in Foshan City, and enhance the competitiveness of the brand "Foshan proprietary Chinese medicine". We will make full use of the historical advantages of Foshan's long-standing traditional Chinese medicine, play the charm of brands and intangible cultural heritages such as Fengliaoqing, Yuanjilin and Yupingfeng, discover the culture of Foshan's traditional Chinese medicine, and actively build a professional exhibition of medicine with traditional Chinese medicine as the core.

### ***5.9. Employing the informatization driven strategy of industrial factors***

Informatization is an inevitable choice to accelerate the realization of industrialization and modernization, and enterprise informatization is an important entry point to drive industrialization. We should seize the favorable opportunity of being identified by the State Ministry of Science and Technology as the key city of the national manufacturing informatization project, and vigorously promote the informatization of the pharmaceutical manufacturing industry in Foshan. Specifically, the following four aspects should be done well: First, by continuously expanding the application and service of information technology in the pharmaceutical industry, promote the combination of information technology and the resource elements of the pharmaceutical industry, and comprehensively promote the improvement of the information level and labor productivity of the pharmaceutical industry through the pharmaceutical information network platform and related technical services. Second, vigorously promote enterprise management informatization. Foshan pharmaceutical enterprises are basically small and medium-sized enterprises, which are relatively weak in enterprise informatization construction and backward in management mode. Therefore, we should vigorously encourage enterprises to apply information technology to implement business process reengineering and management innovation, establish a modern enterprise management system, promote the optimal allocation of human, financial, material and technical resources, and enhance the ability to respond quickly to the market. Third, we will further improve the drug traceability system, make the whole process of drug production traceable, ensure drug treatment, and ensure people's drug safety.

### ***5.10. Using the strategy of introducing top talents of traditional Chinese medicine***

Science and technology is the first productive force, and scientific and technological progress plays an important role in improving the comprehensive economic strength of enterprises, promoting scientific and technological progress. Talents is the key, and high-level professional and technical personnel and management personnel are pivotal to the development of enterprises. In order to accelerate the development of pharmaceutical enterprises in Foshan, enterprises are encouraged to attract high-level professional and technical talents and management talents from home and abroad to work in Foshan. Foshan City has undergone more than 40 years of rapid development through reform and opening up, but there is a serious shortage of senior talents in Chinese medicine, such as doctors and talents above associate level, which is deeply troubling for all large, medium and small Chinese medicine enterprises in the city. In order to solve the problem of talent introduction, and also relying on the advantages of the local university, Foshan University, China Traditional Chinese Medicine Holdings Limited and Foshan University jointly build an industrial college, using the way of directed training of talents, in order to solve the problem of internal demand for talents.

### ***5.11. Pursuing the strategy of supporting the upgrading of traditional Chinese medicine industry***

We need develop practical industrial policies and various preferential measures to encourage enterprises to carry out scientific and technological innovation and industrial upgrading and transformation. For advantageous products and advantageous enterprises with competitive strength, the government should regard them as key cultivation objects, guide enterprises to strengthen product quality management, improve internal management level and innovation consciousness, correctly prevent market risks, and create a good development environment for enterprises. At the same time, government departments strengthen the regulation of the operation behavior of the Chinese medicine market, strengthen market supervision, and create a good market atmosphere.

### 5.12. Supporting Foshan traditional Chinese medicine enterprises to develop brand strategy

There are many Chinese medicine enterprises with many years of history in Foshan, which is one of the characteristics of Lingnan culture, but compared with Beijing Tongrentang, Dong'e E-Jiao and other enterprises, there is a big gap in brand awareness, limited to the spread of Lingnan area. The government can formulate practical measures for brand building, development and protection of Chinese medicine enterprises. The government can also introduce relevant support policies and promote the brand of Foshan's "long-established" TCM enterprises through various channels, media and forms to help them build and develop their brands, so that Foshan TCM enterprises can go out and gain national recognition.

## 6. Conclusions

We systematically analyze the development of Foshan's TCM industry, focusing on advanced national and local practices to promote the high-quality development of TCM. Scientifically investigate the actual situation of the whole chain of Foshan Chinese medicine industry, for Foshan Chinese medicine industry is still facing the development bottlenecks such as few leading enterprises, small scale of most enterprises, weak technology development capability, relatively backward production process and equipment, and unreasonable industrial structure. Compared with advanced TCM enterprises in the country, Foshan TCM still has certain gaps in marketing and intelligent production through literature research, expert consultation, statistical analysis and case studies. From the perspective of practical practice, it proposed 12 strategic suggestions such as headquarters economy, inheritance of essence, independent innovation of Chinese medicine industry and secondary development of famous and excellent products to help Foshan Chinese medicine strong city develop with high quality.

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