

Research on the International Development of Traditional Chinese Medicine Industry from the Perspective of “The Belt and Road Initiative” — Taking Foshan as an Example

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Abstract: *Traditional Chinese medicine is an important part of Chinese science/technology and traditional culture. As more countries and regions attach importance to traditional Chinese medicine and the continuous development of traditional Chinese medicine, the curative effect of traditional Chinese medicine is gradually recognized worldwide and the pace of internationalization is accelerating. In 2021, the State Administration of Traditional Chinese Medicine and the Office of the Leading Group for Promoting the Construction of the “The Belt and Road Initiative” jointly issued the “Development Plan for Promoting the High-quality Integration of Traditional Chinese Medicine into the “The Belt and Road Initiative (2021-2025)”, with a view to strengthening cooperation with countries and creating a new situation in the field of traditional Chinese medicine. As a strong city in the traditional Chinese medicine industry, Foshan has the profound cultural heritage and industrial foundation of traditional Chinese medicine. At the same time, Foshan is also a hub city for the construction of the “The Belt and Road” Initiative. Foshan is expected to stand at the level of the national strategy and grasp the development opportunities of the “The Belt and Road Initiative” to promote the international development of traditional Chinese medicine industry. Facing the status and existing problems of Foshan's traditional Chinese medicine industry, Foshan should explore strategic plans and measures for the internationalization from the perspectives of cultural dissemination, brand building, and intellectual property protection.*

Keywords: *The Belt and Road Initiative; Foshan Chinese Medicine Industry; Internationalization; Cultural Brand; Scientific Research Innovation*

1. Introduction

"The Belt and Road" is the abbreviation of "the Silk Road Economic Belt and the 21st-Century Maritime Silk Road". In 2013, Xi Jinping, general secretary of the Central Committee of the Communist Party of China, first proposed a major proposal to rebuild the Silk Road Economic Belt. In the same year, Chinese Premier Li Keqiang proposed to build the 21st-Century Maritime Silk Road to drive the economic development of China. The Belt and Road Initiative conforms to the trend of the development of global economic integration, and is the direction guide for Chinese reform to reach a new level of economic development. Since ancient times, traditional Chinese medicine has been an important part of the exchanges and cooperation among countries along the ancient Silk Road, and has made great contributions to the health of global people. Under "The Belt and Road" initiative, the international development of traditional Chinese medicine industry has ushered in the new opportunities.

2. Opportunities for the international development of Foshan's traditional Chinese medicine industry under the “ The Belt and Road ” initiative

As early as 2016, "The Belt and Road Development Plan for Traditional Chinese Medicine (2016-2020)" was jointly issued by the State Administration of Traditional Chinese Medicine and the National Development and Reform Commission. In 2021, "The Belt and Road Development Plan for Traditional Chinese Medicine (2021-2025)" was issued, whose development goals are: during the "14th Five-Year Plan" period, cooperate with countries that jointly build "The Belt and Road" to build 30 high-quality overseas Chinese medicine centers, promulgate 30 international standards for traditional Chinese

medicine, and create 10 Chinese medicine culture overseas brands, build 50 Chinese medicine international cooperation bases and a number of national Chinese medicine service bases, strengthen the construction of overseas registration service platforms for Chinese medicine, organize and send Chinese medical aid teams, and encourage social forces to adopt marketization to explore the construction of Sino-foreign hospitals of traditional Chinese medicine. By 2025, the inter-governmental cooperation of traditional Chinese medicine will be further improved. Pragmatic cooperation in the fields of health care, education and training, scientific and technological research and development, cultural communication and other fields will be solidly promoted. The internationalization level of the traditional Chinese medicine industry is expected to be continuously improved, and the high-quality integration of traditional Chinese medicine in the joint construction of "The Belt and Road" will achieve remarkable results.

With the changes in the spectrum of diseases and the renewal of the health concept, the usage of natural medicines and natural treatments to replace some chemical pharmaceutical products has become a general trend in the development of pharmaceutical products in the world. With the popularization of the consumption concept of "returning to nature" and "returning to the basics", the demand and expectation for traditional medical treatment are increasing, and more countries are turning their attention to the traditional medicine market ^[1]. In the field of the global traditional medicine, traditional Chinese medicine is gradually being valued because of its simplicity, convenience, cheapness, and experience, and has become a widely popular therapy. The World Health Organization believes that in order to achieve the goal of "Health Care for All", the use of traditional medicine should be vigorously promoted, which brings broad development of traditional medicine represented by traditional Chinese medicine. In recent years, the international pharmaceutical industry has been committed to finding effective and natural medicines to replace chemical ones. According to the statistics of the World Health Organization, about 80% of the world's population uses natural medicines, and the market demand for international natural medicines is growing at an annual rate of 13%-16% ^[2]. Four major natural medicine markets have been formed: North American European market, Southeast Asian Chinese market, Northeast Asian traditional Chinese medicine market, and African and Arab markets. The annual sales of these four markets account for about 90% of the global natural medicine market. Meanwhile, Chinese export sales of traditional Chinese medicine have grown strongly ^[3]. According to relevant statistics (see Table 1), in the first half of 2022, the export value of traditional Chinese medicine was 2.802 billion US dollars, year-on-year increase of 21.35%. From the perspective of traditional Chinese medicine, plant extracts occupy the highest proportion, with an export value of 1.765 billion US dollars, a year-on-year increase of 28.19%; Chinese herbal medicines and decoction pieces are second, with an export value of 668 million US dollars, an year-on-year increase of 1.83%; Chinese patent medicine exports 207 million US dollars, the largest increase year-on-year increase of 45.57%; health care products exports 162 million US dollars, a year-on-year increase of 20.94%. On the whole, the overseas market of traditional Chinese medicine has huge potential, and the international market is developing rapidly.

Table 1: Export of traditional Chinese medicine from January to June 2022 [4]

Category	Export value (US dollars)	Year-on-year increase (%)
Traditional Chinese medicine	2.802 billion	21.35
Plant extracts	1.765 billion	28.19
Chinese patent medicine	207 million	45.57
Chinese herbal medicines and decoction pieces	668 million	1.83
Health care products	162 million	20.94

Foshan, a city with a profound historical background, is known as the "Ancestor of Chinese Lingnan Medicine" and "Guangdong Hometown of Chinese Patent Medicine". The pharmaceutical industry in Foshan has a profound cultural heritage and a huge industrial cluster. With the gradual penetration of 'The Belt and Road' Initiative into the traditional Chinese medicine industry, Foshan's traditional Chinese medicine industry is ushering in new opportunities. 'The Belt and Road' Initiative will promote the international development of Foshan's traditional Chinese medicine industry, not only a response to the realistic requirements of the Communist Party and the national policies, but also a necessary selection to comply with the development of the international situation.

3. The basic advantages of the internationalization of Foshan's traditional Chinese medicine industry under 'The Belt and Road' Initiative'

3.1. Profound traditional inheritance is the cultural foundation for the internationalization of Foshan's traditional Chinese medicine industry

Traditional Chinese medicine is an important treasure of the traditional Chinese culture, which embodies rich and profound philosophical thoughts, noble moral cultivation and excellent thinking wisdom. Foshan's traditional Chinese medicine industry has a long history and is known as "birthplace of Lingnan patent medicine", "Ancestor of Chinese Lingnan Medicine", and "Guangdong Hometown of Chinese Patent Medicine". Many famous doctors have emerged, and the prosperity and development of traditional Chinese medicine has also attracted many groups of doctors to gather in Foshan, becoming an indispensable and wonderful chapter in the culture of traditional Chinese medicine.

In addition, Foshan has a profound historical foundation for foreign exchange of traditional Chinese medicine. Historically, Chinese medicine has always been one of the protagonists of China's foreign cultural and scientific exchanges and trade. Since the Han Dynasty, through the Tang, Song, Yuan, Ming and Qing dynasties, it has a wide range of influences in China's neighboring countries, Southeast Asia and the Western Regions, promoting the development of domestic and foreign trade and the exchange of science and culture [5]. In the late Ming and early Qing dynasties, some Westerners had direct access to traditional Chinese medicine, and it was spread and promoted by missionaries. Europeans had a better understanding of traditional Chinese medicine, and the most widely accepted ones were sphygmology and acupuncture. Foshan is close to Guangzhou, geographically close to Hong Kong and Macau, and is located at the forefront of the intersection of Chinese and Western cultures. The continuous deepening of the influence of Western technology and culture, prompted intellectuals including Foshan doctors to "open their eyes to see the world". At the same time of inheriting traditional Chinese medicine culture, the scientificization of traditional Chinese medicine was innovated and promoted. For example, in the late Qing Dynasty, the physician Zhu Peiwen in Nanhai district of Foshan truly learned and understood Western medicine, and wrote a book named "Huayang Zangxiang Yuejuan", which pointed out to respect the facts and reserve the places dissent. It can be seen that Zhu Peiwen can not only absorb the strengths of Western medicine, but also does not deviate from the principles of traditional Chinese medicine. Tan Cizhong, a native of Chancheng district of Foshan, proposed the "scientificization of traditional Chinese medicine", and proposed that the goal was to achieve the four characters of "truth, truth, effect and accuracy", by taking effective medicines, conducting scientific experiments to prove the truth, determining its effectiveness, and extracting the essence for application, in order to achieve science as the body and traditional Chinese medicine for the usage [6].

3.2. The huge traditional Chinese medicine industry cluster is the economic foundation for the internationalization of Foshan's traditional Chinese medicine industry

Foshan's pharmaceutical industry is based on the traditional Chinese medicine industry, and takes biopharmaceuticals, innovative drugs and innovative medical devices as breakthroughs to extend the development of the "Big Health" industry chain. Foshan currently has 51 pharmaceutical enterprises, 84 pharmaceutical delivery enterprises, 4,272 retail pharmacies, 297 first-class licensed medical device enterprises, and 217 second- and third-class licensed medical device enterprises. In 2019, Foshan's pharmaceutical manufacturing industry achieved an industrial scale of 5.535 billion Chinese Yuan, an increase of 15.7% over the previous year, much higher than the city's regulated industrial added value growth rate (7%). The output value was 17.209 billion Chinese Yuan, a year-on-year increase of 20%. From January to August this year, the industrial value-added was 4.713 billion Chinese Yuan, an increase of 37.3% over the previous year. In 2019, there were 2 pharmaceutical manufacturing enterprises in Foshan with a scale of revenue of more than 1 billion Chinese Yuan, namely Guangdong Efang Pharmaceutical Co., Ltd. and Sinopharm Group Guangdong Medi-world Pharmaceutical Co., Ltd. Guangdong Efang is a modern Chinese medicine pharmaceutical enterprise mainly engaged in the production and development of traditional Chinese medicine formula granules. Its main products are consisted of more than 600 kinds of traditional Chinese medicine formula granules, and the domestic market share is nearly 30% [7]. In 2019, Guangdong Efang's sales revenue was 5.7 billion Chinese Yuan, and the annual tax payment was 719 million Chinese Yuan, a year-on-year increase of 104.9%. The leading products of Guangdong Medi-world are "Yupingfeng" Granules, Nifedipine Sustained-Release Tablets (I) ("Santongping"), and Nifedipine Sustained-Release Tablets (III) ("Santongluo"). "Santongping" is a well-known brand of anti-hypertension in China; "Yupingfeng" Granules are the

exclusive varieties produced in the National Essential Drugs List, and have the largest market share in the domestic spontaneous perspiration drug market. However, the export of traditional Chinese herbal medicine products in Foshan is still dominating, and the proportion of Chinese patent medicines is relatively low. According to the data released by the Customs, in 2021, Foshan's import and export trade was 616.07 billion Chinese Yuan, a year-on-year increase of 21.7%, which was 0.3 percentage points and 5 percentage points higher than the national and provincial growth rates in the same period. Among them, in terms of the export of traditional Chinese medicine, the export value of Foshan Chinese herbal medicines was 63.56 million Chinese Yuan, a year-on-year increase of 57%, and the Chinese patent medicines was 29.99 million Chinese Yuan, a year-on-year decrease of 7.1%. Compared with other advantageous industries in Foshan, the total import and export trade value of the traditional Chinese medicine industry is relatively low, and there is still a lot of room for the international development of traditional Chinese medicine.

3.3. Dense industrial policy is the policy basis for the internationalization of Foshan's traditional Chinese medicine industry

Relying on the agglomeration and development of Sanlongwan, Foshan is striving to build a cluster of biomedicine and big health industries. In 2019, the biomedicine and big health industry cluster achieved an output value of 26.2 billion Chinese Yuan. Among them, the cluster of pharmaceutical manufacturing and medical equipment manufacturing accounted for 66% and 33% of the total output value, respectively ^[7]. The cluster has 102 enterprise above designated size (20 million Chinese Yuan). In terms of platform, the construction of innovative carriers was finished, such as the Life and Health Center of the Chinese Academy of Sciences, the International Innovation and Transformation Bio-industry Incubation Center, the Guangdong Provincial Medical Big Data Fusion Application Engineering Technology Research Center, and the Liandong U Valley Shunde Ecological Medicine Technology Innovation Park. The first Sino-German cooperation in South China project was introduced to build the biomacromolecule drug development service (CRO) and production service (CMO) platform. In addition, more than 40 biopharmaceutical companies, including Guangdong Anke South China Biotechnology Co., Ltd., Foshan Hanteng Biotechnology Co., Ltd., and Guangdong Yinwei Decoding Biotechnology Co., Ltd., were introduced. Funding: Focusing on the development needs of the biopharmaceutical industry, various areas of Sanlong Bay have issued a number of support policies for the biopharmaceutical industry. In terms of talents: co-build graduate schools with universities and medical schools, cultivate talents needed by biomedical enterprises, and introduce more than 30 biomedical innovation and scientific research teams to settle down. The Foshan Anjie Health Industrial Park, invested and built by the team of academician Zhong Nanshan, has settled down, providing strong technical and talent support for the development of Foshan's biomedicine and big health industry clusters.

With its unique resource advantages and price advantages, traditional Chinese medicine has stepped to international market and has been widely praised. In recent years, the total export volume of Foshan traditional Chinese medicine products has shown an upward trend. In addition to exporting to the original traditional Asian and American markets, the quantity exported to the European market is also increasing year by year. The internationalization of the traditional Chinese medicine industry is showing a trend of continuous improvement ^[8].

4. Disadvantages and countermeasures of the internationalization of Foshan's traditional Chinese medicine industry under the "The Belt and Road" initiative

Foshan's traditional Chinese medicine industry has a long history, extensive and profound, and it also demonstrates peculiar and reliable curative effects. After thousands of years of practice, it has not only spread the Chinese home and abroad, but also helped the world under the trend of internationalization of the traditional Chinese medicine industry. It has made a major contribution to the health of the Chinese nation and even the entire human race. However, Chinese medicine still faces many opportunities and challenges in the process of internationalization.

4.1. Correctly handle cultural differences, smooth communication and publicity channels

Traditional Chinese medicine has its own unique medical theory and practice system, which is completely different from Western medicine, and the clinical treatment and judging are also completely different ^[9]. In this case, it is necessary to strengthen the mutual understanding and communication between these two, in order to gradually generate a sense of identity. At the same time, it is also necessary

for Chinese traditional Chinese medicine enterprises and practitioners to make continuous efforts to promote traditional Chinese medical theory to foreign medical scholar and the public. The spread of traditional Chinese medicine culture is very important for the entire industry for internationalization, which will be recognized by more people and build a better platform^[10]. In recent years, many Western countries have enacted legislation on traditional Chinese medicine, and many European and American countries have accepted traditional Chinese medicine products. The reason is also inseparable from the promotion by overseas Chinese. Therefore, Foshan needs to strengthen the overseas cultural dissemination of traditional Chinese medicine, and integrate the promotion of Foshan traditional Chinese medicine culture into the "The Belt and Road" construction.

4.2. Strengthen intellectual property protection and safeguard overseas legitimate rights and interests

The process of industrialization and scale-expansion of traditional Chinese medicine is complicated, which involves many interests and institutional constraints. Intellectual property issues are unavoidable during this process. Taking patent rights as an example, Chinese Patent Law grants the inventor, namely the patentee, the corresponding property rights, thereby encouraging the inventor to invent and create. Moving the protection of this patent right to the field of traditional Chinese medicine research and development can drive traditional Chinese medicine enterprises to develop and invest in new drugs. The Patent Law has established a market-oriented commercialization model by granting the inventor the exclusive right to use and sell the patent, which not only encourages the innovation of traditional Chinese medicine products, but also brings huge profits to traditional Chinese medicine enterprises. From the current point of view, due to the comprehensive curative effect of traditional Chinese medicine in the treatment process, its function often comes from the joint action of various ingredients in the prescription. More than 80% of the patent applications are based on the compound preparations of traditional Chinese medicine, and the number of patents applied for ingredients extracted from natural medicinal plants, that are well recognized by Western countries, is very small^[10].

In recent years, my country has lost a large number of traditional Chinese medicine recipes, and trademarks in foreign countries have been squatted. Some time-honored Chinese medicine brands such as "Wanglaoji" and "PoChai Pills" have been maliciously registered. And "Foreign traditional Chinese medicine" has used the deep processing and finishing methods of traditional Chinese medicine to rush and register traditional Chinese medicine patents in China, and shared the domestic market with the "Foreign traditional Chinese medicine" brand. There are more than 10,000 Chinese medicine patents approved in China, accounting for more than 80% of similar patents in China. These multinational pharmaceutical groups have also applied for Chinese medicine patents in countries around the world. If this continues, it is very likely that in the near future, China will have to pay patent royalties to foreigners after 'consuming' the traditional Chinese medicine recipes from their ancestors.

Faced with these problems, the traditional Chinese medicine industry in Foshan should strengthen its current intellectual property system, and use legal weapons to protect its legitimate rights and interests. The awareness of intellectual property protection of traditional Chinese medicine should be improved in the whole industry, promoting the industrialization and commercialization of intellectual property rights related to traditional Chinese medicine, in order to establish and improve the early warning and rights protection assistance system of traditional Chinese medicine patent rights. It is proposed to strengthen the protection of intellectual property rights of traditional Chinese medicine, intensify the crackdown on infringing and counterfeit products of traditional Chinese medicine, carry out international exchange activities on intellectual property rights of traditional Chinese medicine, and strengthen the creation, application, management and protection of intellectual property rights of traditional Chinese medicine.

4.3. Strengthen the research of new Chinese medicine and increase the level of scientific research and innovation

Scientific research and innovation is the inexhaustible source of power for the survival and development of enterprises. Foshan traditional Chinese medicine enterprises still need to make continuous efforts in scientific research and technological innovation. In the environment of economic globalization and the fierce competition in the fierce international pharmaceutical market, Foshan pharmaceutical companies need to improve their technological content and form core technologies that are difficult to replicate when competing with large international pharmaceutical enterprise groups^[11]. As early as 2003, Lipitor (atorvastatin), a new lipid-lowering drug developed by Pfizer, generated sales of 10.3 billion US dollar. Compared with only more than 10 Chinese medicine products with the highest sales in my country in the same year, traditional Chinese medicine companies only have the highest sales

of 2.4 billion. The proportion of Chinese patent medicine manufacturing in the total output value of Chinese pharmaceutical industry has been hovering around 20% for a long time. In the past ten years, the proportion of new Chinese medicine approved for listing is less than 1%, and the core competitive advantage of Chinese medicine innovation has not been fully reflected. Looking at the global traditional Chinese medicine market, Japan accounts for 80%, South Korea accounts for 10%, and China accounts for only 2%. China is a big country of natural medicine, while the share of traditional Chinese medicine in the international market is quite small. According to the statistics of the World Health Organization, the current global botanical medicine market is about 60 billion US dollars, China's export of traditional Chinese medicine has not caught up with the "express train" of the international botanical medicine trade.

The survival and development of an enterprise is dependent on the ability to master core technologies, and its competitiveness has changed from quantitative comparison to qualitative competition. To win in today's competition, it must improve its own technological innovation and research and development capabilities. Therefore, Foshan traditional Chinese medicine enterprises and scientific research institutes need to invest more in the research and development of new traditional Chinese medicines, which is the key to speeding up the international development of Foshan traditional Chinese medicine.

5. Conclusions

To develop traditional Chinese medicine production in Foshan, it is necessary to base on profound traditional Chinese medicine cultural heritage and industrial foundation, stand on the height of national strategy, seize the opportunity of national macroeconomic development of "One Belt and One Road", and explore the strategic plans and measures for the internationalization of traditional Chinese medicine industry in Foshan from the aspects of cultural communication, brand building, intellectual property protection, scientific and technological innovation.

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