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Biopharmaceutical Industry Policy from the Perspective of Policy Tools and Innovation Value Chain

Kaicheemary Lim

Skylin Biotechnology Pte Ltd, No: 77 High Street, #09-11, High Street Plaza, Singapore

*Email: Ihealthy2u@gmail.com

Abstract

This paper aims to explore the interaction between policy tools and innovation value chain, and analyze the impact of policy tools on innovation value chain and the feedback effect of innovation value chain on policy tools. Firstly, this paper introduces the basic concepts of policy tools and innovation value chain, and expounds the promotion effect of policy tools on innovation value chain and the feedback effect of innovation value chain on policy tools. Secondly, this paper analyzes the impact of financial support policies, tax incentives, patent protection policies and public procurement policies on the innovation value chain. Finally, this paper summarizes the feedback effect of innovation value chain on policy tools, and puts forward relevant suggestions.

Keywords

Policy Tools; Innovation Value Chain; Financial Support; Tax Incentives; Patent Protection; Public Procurement.

1. Introduction

With the rapid development of science and technology and the promotion of globalization, the biomedical industry has become one of the important pillars of the world economy. The biomedical industry has the characteristics of high technology, high investment, high risk and high return. Its development is of great significance to enhance the national scientific and technological strength and the level of economic development. Policy tools and innovation value chain are two important aspects to promote the development of biomedical industry. They affect and promote each other, and jointly promote the rapid development of biomedical industry.

Policy tools are a series of measures and methods adopted by the government to promote the development of specific industries, including fiscal policy, monetary policy, industrial policy, etc. In the biomedical industry, policy tools play a vital role. By formulating and implementing various policy tools, the government can provide financial support, tax incentives, patent protection and other important support for enterprises to promote the development and innovation of the biomedical industry. At the same time, policy tools can also promote the transformation, upgrading and international development of the biomedical industry by guiding the market direction, adjusting the industrial structure, reducing enterprise costs and other means.

The innovation value chain is the connection and interaction between various links in the whole process of the biomedical industry from basic research to commercial production. This process includes the discovery of new knowledge, the invention of new technology, the creation of new services, and the process of bringing these innovative achievements to the market and realizing business value. The innovation value chain is the core driving force of the development of the biomedical industry, which can promote the continuous development of the industry and achieve sustained growth and upgrading.

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In the biomedical industry, the interaction between policy tools and innovation value chain has played an important role in promoting the development of the industry. Policy tools can provide necessary support and guidance for the innovation value chain, and promote the generation and market promotion of innovation achievements; The development of innovation value chain can feed back the effect of policy tools and suggestions for improvement, and help the government formulate more scientific and reasonable policies.

From the perspective of policy tools and innovation value chain, this paper will make an in-depth discussion on the biomedical industry policy. Firstly, this paper will introduce the basic concepts and characteristics of policy tools and innovation value chain; Secondly, this paper will analyze the impact of policy tools on innovation value chain and the feedback effect of innovation value chain on policy tools; Finally, this paper will put forward some policy suggestions for the biomedical industry from the perspective of policy tools and innovation value chain.

Through this study, we can have a deeper understanding of the important role of policy tools and innovation value chain in the development of biomedical industry. At the same time, we can also provide reference and suggestions for the government to formulate scientific and reasonable policies for the biomedical industry, and promote the rapid development and upgrading of China's biomedical industry. Therefore, the research of this paper has important theoretical and practical significance.

2. Overview of Policy Tools and Innovation Value Chain

Policy tools are the methods and means adopted by the government to achieve specific policy goals, while the innovation value chain is the connection and interaction of various links in the whole process of the biomedical industry from basic research to commercial production. In the biomedical industry, the interaction between policy tools and innovation value chain plays a vital role in promoting the development of the industry.

2.1. Policy Tools

Biomedical industry policy tools are a series of measures and methods adopted by the government to promote the development of biomedical industry, including fiscal policy, monetary policy, industrial policy, etc. These policy tools can provide financial support, tax incentives, patent protection and other important support for enterprises, and promote the development and innovation of the biomedical industry.

2.1.1. Fiscal Policy

Fiscal policy is a policy that the government regulates the total supply and demand of the society through fiscal expenditure and tax policy, so as to realize the stable operation and development of the economy. In the biomedical industry, the government can support the R&D and innovation activities of enterprises and promote the development of the biomedical industry by increasing financial investment, setting up special funds, providing scientific research funds and other means.

2.1.2. Monetary Policy

Monetary policy is the measures taken by the government or the central bank to affect economic activities, especially the measures to control money supply and regulate interest rates. In the biomedical industry, the government can guide financial institutions to provide loans and financing support to biomedical enterprises through the implementation of monetary policy, so as to promote the rapid development of the biomedical industry.

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2.1.3. Industrial Policy

Industrial policy is a series of policies and measures taken by the government to promote the development of specific industries. In the biomedical industry, the government can promote the rapid development and upgrading of the biomedical industry by formulating industrial planning, optimizing the industrial structure, and supporting the development of key enterprises.

2.2. Innovation Value Chain

The innovation value chain is the connection and interaction between various links in the whole process of the biomedical industry from basic research to commercial production. This process includes the discovery of new knowledge, the invention of new technology, the creation of new services, and the process of bringing these innovative achievements to the market and realizing business value. The innovation value chain is the core driving force for the development of the biomedical industry, which can promote the continuous development of the industry and achieve sustained growth and upgrading.

2.2.1. Basic Knowledge Discovery

Basic knowledge discovery is the starting point of the innovation value chain, which includes the investment and exploration of basic research on disease etiology, pathology, pharmacology and so on. The government can promote the discovery and innovation of basic knowledge by increasing the investment of scientific research funds and encouraging scientific research institutions and enterprises to strengthen cooperation.

2.2.2. New Technology Invention

New technology invention is an important link in the innovation value chain, which includes technological innovation and invention in drug research and development, clinical trials, production processes and other links. The government can promote the transformation and application of new technological inventions and innovative achievements by supporting enterprises to strengthen technological R&D and innovation.

2.2.3. New Service Creation

New service creation is an important part of the innovation value chain, which includes innovation and creation in the fields of medical services, health management, pharmaceutical research and development, etc. The government can improve the service quality and level of the biomedical industry by encouraging enterprises to strengthen service innovation and promotion.

2.3. Market Promotion and Commercial Value Realization

Market promotion and commercial value realization are the key links of the innovation value chain, which includes the process of bringing biomedical products to the market and realizing commercial value. The government can enhance the public's awareness and acceptance of biomedical products by strengthening market supervision and promotion, and promote market promotion and the realization of commercial value.

The government can ensure the quality and safety of biomedical products by strengthening market supervision. This includes strict supervision over the registration, production and sales of drugs, as well as the review and management of drug advertising. By strengthening market supervision, the public's trust and acceptance of biomedical products can be improved, which can promote market promotion and the realization of commercial value.

The government can enhance the public's awareness and acceptance of biomedical products by increasing the promotion efforts. This includes carrying out public welfare publicity activities, organizing expert lectures, providing public education, etc. By strengthening the promotion,

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more people can understand the advantages and characteristics of biomedical products, and then promote the market promotion and the realization of commercial value.

2.4. Interaction between Policy Tools and Innovation Value Chain

There is a close interaction between policy tools and innovation value chain. Policy tools can promote the development and improvement of innovation value chain, while the development of innovation value chain can feed back the effect of policy tools and suggestions for improvement. This interaction is of great significance for promoting the innovation and development of the biomedical industry.

2.4.1. Promoting Effect of Policy Tools on Innovation Value Chain

Through the implementation of various policy tools, the government can provide financial support, tax incentives, patent protection and other important support for enterprises, and promote the development and innovation of basic knowledge discovery, new technology invention, new service creation, market promotion and commercial value realization of the biomedical industry.

Financial support policy tools can reduce the R&D costs and innovation risks of enterprises. Through the establishment of special funds and loan guarantees, the government can provide financial support for enterprises, help enterprises carry out basic research and application research, and promote the invention of new technologies and the creation of new services.

Preferential tax policy tools can encourage enterprises to carry out technological innovation and R&D activities. The government can reduce the R&D costs and innovation risks of enterprises, and improve the profit level and technological innovation enthusiasm of enterprises by reducing the income tax and value-added tax and other tax preferential policies of enterprises.

Patent protection policy tools can protect the innovation achievements and intellectual property rights of enterprises. By strengthening patent protection and law enforcement, the government can protect the innovation achievements and intellectual property rights of enterprises, avoid losses caused by infringement, and promote the market promotion of new products and the realization of commercial value.

2.4.2. Feedback of Innovation Value Chain on Policy Tools

The development of innovation value chain can feed back the effect of policy tools and suggestions for improvement. Through the evaluation and feedback of the implementation effect of policy tools, the government can timely adjust the design and implementation of policy tools to better meet the development needs of the biomedical industry.

The development of innovation value chain can provide basis and reference for policy making. By monitoring and analyzing the development of each link of the innovation value chain, the government can understand the implementation effect and existing problems of policy tools, and provide basis and reference for subsequent policy-making.

The development of innovation value chain can provide suggestions and opinions for policy adjustment. By evaluating and analyzing the development trend and innovation demand of the innovation value chain, the government can understand the shortcomings and improvement space of policy tools, and provide suggestions and opinions for subsequent policy adjustment.

The development of innovation value chain can provide support and help for policy promotion. The government can summarize and promote the successful cases and experiences of the innovation value chain, provide support and help for the follow-up policy promotion, and promote more enterprises and institutions to benefit from the support and innovation development of policy tools.

To sum up, the interaction between policy tools and innovation value chain is of great significance to promote the innovation and development of the biomedical industry. The

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government should strengthen the formulation and implementation of policy tools, pay attention to the development status and feedback of the innovation value chain, and timely adjust the design and implementation of policy tools, so as to contribute to the sustainable development and innovation of the biomedical industry.

3. Impact of Policy Tools on Innovation Value Chain

In the biomedical industry, policy tools have a significant impact on the innovation value chain. The following will analyze the impact of policy tools on the innovation value chain from several aspects.

3.1. Impact of Financial Support Policy on Innovation Value Chain

The financial support policy is one of the important means in the biomedical industry policy. It mainly provides financial support for enterprises through government investment, tax incentives, loan guarantees and other ways, so as to reduce the R&D and production costs of enterprises and promote the R&D and industrialization of new drugs.

Financial support policies can promote basic research and applied research. The government supports universities, scientific research institutions and enterprises to carry out basic research and applied research, improve the technological level and innovation ability of enterprises, and provide the basis for the follow-up innovation value chain through the establishment of scientific research funds.

The financial support policy can reduce the R&D cost of enterprises. The government provides financial support for enterprises by providing tax incentives, loan guarantees and other means, reducing the R&D costs of enterprises and improving the profit level of enterprises, so as to stimulate the R&D enthusiasm and innovation vitality of enterprises.

Financial support policies can promote technology transfer and diffusion. The government promotes technology transfer and diffusion, and promotes the development and technological progress of the biomedical industry by establishing technology transfer institutions and strengthening patent protection.

3.2. Impact of Preferential Tax Policies on Innovation Value Chain

Tax preference policy is another important means in the biomedical industry policy. It mainly reduces the tax burden of enterprises, improves the profit level of enterprises, and stimulates the R&D enthusiasm and innovation vitality of enterprises through the reduction and exemption of enterprise income tax and value-added tax.

Preferential tax policies can improve the R&D enthusiasm of enterprises. The government reduces the tax burden of enterprises and improves the profit level of enterprises by reducing or exempting enterprise income tax and value-added tax, so as to stimulate the enthusiasm and innovation vitality of enterprises and promote the research, development and industrialization of new drugs.

Preferential tax policies can promote technology transfer and diffusion. The government protects the innovative achievements of enterprises by strengthening the protection of drug patents, extending the patent protection period, and increasing the amount of infringement compensation; At the same time, technology transfer and diffusion can be promoted by establishing patent pool and strengthening patent examination.

Preferential tax policies can reduce the production costs of enterprises. The government can reduce the production cost of enterprises and improve the market competitiveness of enterprises by reducing the value-added tax of pharmaceutical production enterprises, so as to promote the development of biomedical industry and technological progress.

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3.3. Impact of Patent Protection Policy on Innovation Value Chain

Patent protection policy is another important means in the biomedical industry policy. It mainly protects the innovation achievements of enterprises from being infringed by others and stimulates the innovation power of enterprises by strengthening patent protection; At the same time, it can also promote technology transfer and diffusion, and promote the development and technological progress of the whole industry.

Patent protection policy can protect the innovation achievements of enterprises. The government protects the innovation achievements of enterprises by strengthening the protection of pharmaceutical patents, extending the patent protection period, and increasing the amount of infringement compensation, so as to prevent others from infringement, so as to stimulate the R&D enthusiasm and innovation vitality of enterprises.

Patent protection policy can promote technology transfer and diffusion. The government promotes technology transfer and diffusion, and promotes the development and technological progress of the biomedical industry by establishing a patent pool and strengthening patent examination.

Patent protection policies can promote international cooperation and exchanges. Through strengthening international cooperation and exchange, the government jointly formulates drug patent protection policies to promote the international registration and marketing of drugs, so as to promote the international development of the biomedical industry.

3.4. Impact of Public Procurement Policy on Innovation Value Chain

Public procurement policy is another important means of biomedical industry policy. It mainly promotes the promotion and application of new drugs through government procurement, improves public acceptance of innovative drugs, and promotes the realization of innovative value.

Public procurement policy can promote the promotion and application of new drugs. The government purchases new drugs through public procurement and other ways to improve the public's acceptance of innovative drugs, so as to promote the promotion and application of new drugs.

Public procurement policy can reduce the market risk of enterprises. The government purchases new drugs through public procurement and other means, which can reduce the market risk of enterprises, improve the market competitiveness of enterprises, and promote the development and technological progress of the biomedical industry.

Public procurement policy can promote the development of public health undertakings. The government purchases new drugs through public procurement and other means, which can promote the development of public health undertakings and improve the health level and quality of life of the public.

4. Feedback Effect of Innovation Value Chain on Policy Tools

In the biomedical industry, policy tools have a significant impact on the innovation value chain. At the same time, the development of innovation value chain also has a certain feedback effect on policy tools. The following will analyze the feedback effect of innovation value chain on policy tools from several aspects.

4.1. Feedback of Innovation Value Chain on Policy Tools

The development of innovation value chain has a certain feedback effect on policy tools, mainly in the following aspects:

The development of innovation value chain provides a reference for the formulation of policy tools. The development trend and problems of the innovation value chain can be used as an

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important reference for the formulation of policy tools. According to the development of the innovation value chain, the government can formulate more scientific and reasonable policy tools to promote the development and technological innovation of the biomedical industry.

The development of innovation value chain can provide suggestions for the improvement of policy tools. There may be some problems in the development of innovation value chain, which can provide suggestions for the improvement of policy tools. According to these problems, the government can adjust the design of policy tools to better meet the development needs of the biomedical industry.

The development of innovation value chain can promote the innovation of policy tools. With the continuous development of the biomedical industry, policy tools also need to be constantly updated and innovated. The development of innovation value chain can promote the innovation of policy tools and provide more comprehensive and effective support for the development of biomedical industry.

4.2. Feedback Effect of Innovation Value Chain on Financial Support Policies

The development of the innovation value chain has a certain feedback effect on the financial support policy, mainly in the following aspects:

The development of innovation value chain can provide reference for the formulation of financial support policies. The development trend and problems of the innovation value chain can be used as an important reference for the formulation of financial support policies, helping the government better grasp the R&D and production situation of enterprises, and formulate more scientific and reasonable financial support policies.

The development of innovation value chain can provide suggestions for the improvement of financial support policies. There may be some problems in the development of innovation value chain, which can provide suggestions for the improvement of financial support policies. According to these problems, the government can adjust the design of financial support policies to better meet the development needs of the biomedical industry.

The development of innovation value chain can promote the innovation of financial support policies. With the continuous development of the biomedical industry, financial support policies also need to be constantly updated and innovated. The development of innovation value chain can promote the innovation of financial support policies and provide more comprehensive and effective support for the development of biomedical industry.

4.3. Feedback Effect of Innovation Value Chain on Preferential Tax Policies

The development of the innovation value chain has a certain feedback effect on the preferential tax policies, mainly in the following aspects:

The development of innovation value chain can provide reference for the formulation of preferential tax policies. The development trend and problems of the innovation value chain can be used as an important reference for the formulation of tax preferential policies, help the government better grasp the R&D and production situation of enterprises, and formulate more scientific and reasonable tax preferential policies.

The development of innovation value chain can provide suggestions for the improvement of tax preferential policies. There may be some problems in the development process of innovation value chain, which can provide suggestions for the improvement of preferential tax policies. According to these problems, the government can adjust the design of tax incentives to better meet the development needs of the biomedical industry.

The development of innovation value chain can promote the innovation of preferential tax policies. With the continuous development of the biomedical industry, tax incentives also need to be constantly updated and innovated. The development of innovation value chain can

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promote the innovation of preferential tax policies and provide more comprehensive and effective support for the development of biomedical industry.

4.4. Feedback Effect of Innovation Value Chain on Patent Protection Policy

The development of the innovation value chain has a certain feedback effect on the patent protection policy, mainly in the following aspects:

The development of innovation value chain can provide reference for the formulation of patent protection policy. The development trend and problems of the innovation value chain can be used as an important reference basis for patent protection policy formulation, help the government better grasp the R&D and production situation of enterprises, and formulate more scientific and reasonable patent protection policies.

The development of innovation value chain can provide suggestions for the improvement of patent protection policy. There may be some problems in the development of innovation value chain, which can provide suggestions for the improvement of patent protection policy. According to these problems, the government can adjust the design of patent protection policy to better meet the development needs of the biomedical industry.

5. Suggestions

In the biomedical industry, policy tools play a vital role in the development of innovation value chain. In order to further promote the innovation and development of the biomedical industry, the government needs to increase the use and optimization of policy tools, including financial support, tax incentives and patent protection.

5.1. Financial Support

Financial support is one of the important means to promote the innovation and development of biomedical industry. The government can set up more special funds and loan guarantees to support enterprises, universities and scientific research institutions to carry out basic research and application research, reduce the R&D cost of enterprises, and improve the innovation ability and market competitiveness of enterprises.

1) Special fund

The government can set up various types of special funds, such as national major science and technology projects, key R&D plans, etc., to support different fields and links of the biomedical industry. The establishment of these special funds can provide a stable source of funds for enterprises and scientific research institutions to support their innovative research and industrial application.

2) Loan guarantee

The government can provide financial support for enterprises through loan guarantee. Loan guarantee can reduce the loan risk of banks, thereby increasing the willingness of banks to provide loans to biomedical enterprises. The government can establish a loan guarantee mechanism through cooperation with banks to provide low interest loans or loan guarantee services for biomedical enterprises to support the innovation and development of enterprises.

5.2. Tax Preference

Tax preference is an important means for the government to encourage enterprises to carry out technological innovation and industrial development. The government can better adapt to the development needs of the biomedical industry by adjusting the preferential tax policies, such as increasing the tax incentives for innovative drugs and encouraging the R&D and industrialization of new drugs.

1) VAT preference

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The government can implement value-added tax preferential policies for the products and services of biomedical enterprises, reduce the tax burden of enterprises and improve the profitability of enterprises. For example, VAT reduction or refund policies can be implemented for equipment and raw materials used for new drug research and development, drug sales and other links.

2) Enterprise income tax preference

Enterprise income tax preference can reduce the tax burden of enterprises and improve the net profit level of enterprises. The government can implement preferential income tax policies for biomedical enterprises, such as reducing or exempting corporate income tax and increasing the deduction of R&D expenses. In addition, the government can also give preferential measures such as income tax relief or credit to enterprises and individuals investing in biomedical innovation projects.

5.3. Patent Protection

Patent protection is not only an important means of protecting the innovation achievements of enterprises, but also a key factor to stimulate the R&D enthusiasm and innovation vitality of enterprises. The government can protect the innovative achievements of enterprises and promote the sustainable development of the biomedical industry by strengthening the protection of pharmaceutical patents, extending the patent protection period, and increasing the amount of infringement compensation.

1) Extension of patent protection period

In order to better protect the rights and interests of drug patent holders, the government can extend the protection period of drug patents. By extending the term of patent protection, the benefits and market competitiveness of drug patent holders can be increased, and more enterprises and individuals can be encouraged to invest in the field of drug R&D and innovation.

2) Increase of patent infringement compensation

In order to strengthen the fight against drug patent infringement, the government can increase the amount of compensation for patent infringement. High infringement compensation costs can effectively curb the occurrence of infringement, protect the legitimate rights and interests of drug patent holders, and promote the transformation and application of drug innovation achievements.

5.4. Support Public Procurement

Public procurement is one of the important means to promote the promotion and application of new drugs. The government can purchase new drugs through public procurement and other ways to improve the public's acceptance of innovative drugs, reduce the market risk of enterprises and improve the market competitiveness of enterprises.

1) Establishment of public procurement fund

The government can set up a public procurement fund for the purchase of new drugs and medical equipment. The support of public procurement funds can reduce the market risk and sales cost of enterprises, improve the market competitiveness of enterprises, and promote the R&D and industrial application of new drugs.

2) Support medical institutions to purchase new drugs

The government can introduce policies to encourage medical institutions to give priority to purchasing new drugs and innovative medical equipment. Through policy guidance and support, the market demand for new drugs can be increased and the promotion and application of new drugs can be promoted. At the same time, it also helps to improve the medical level and treatment effect, and provide better medical services for the public.

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5.5. Strengthen Policy Publicity and Training

The government can strengthen policy publicity and training for enterprises and researchers, help enterprises and researchers better understand and use policy tools, and improve the implementation effect of the policy. Specific measures include:

1) Establish policy publicity platform

The government can establish a policy publicity platform to timely release the policy information and interpretation of the biomedical industry, so that enterprises and researchers can understand and master the policy content and application process. At the same time, feedback and suggestions from enterprises and researchers can also be collected through the platform to continuously optimize the design and application of policy tools.

2) Holding policy training courses

The government can regularly hold policy training courses and invite experts and scholars in relevant fields to interpret and train policies for enterprises and researchers. The training content can include policy application process, application material preparation, policy preferential measures, etc., to improve the policy awareness and operational ability of enterprises and researchers.

5.6. Establish Policy Evaluation and Adjustment Mechanism

The government can establish a policy evaluation and adjustment mechanism, regularly evaluate the implementation effect and existing problems of policy tools, and timely adjust the design of policy tools to better meet the development needs of the biomedical industry.

1) Evaluation mechanism

The government can set up a special evaluation agency or entrust a third-party agency to evaluate the implementation effect of the policy tools. The evaluation content includes the objectives, measures, inputs, outputs, benefits and other aspects of the policy tools. Through the evaluation, we can understand the implementation of the policy tools, find out the problems and deficiencies, and provide the basis for the subsequent policy adjustment.

2) adjustment mechanism

According to the evaluation results and the actual situation, the government can adjust the design of policy tools in time. The adjustment content includes the priority direction of the policy, key areas, support methods, fund allocation, etc. By timely adjusting the design of policy tools, we can better adapt to the development needs of the biomedical industry and improve the pertinence and effectiveness of the policy.

5.7. Support Innovation and Entrepreneurship

The government can support innovation and entrepreneurship, encourage enterprises and researchers to carry out technological innovation and product development, and promote the transformation, upgrading and international development of the biomedical industry.

1) Support policies for innovation and Entrepreneurship

The government can formulate a series of policies and measures to support innovation and entrepreneurship, including financial support, tax incentives, loan guarantees, etc. These measures can reduce the cost of innovation and Entrepreneurship of enterprises and researchers, and stimulate their enthusiasm and enthusiasm for innovation.

2) Construction of innovation and entrepreneurship platform

The government can build a number of innovation and entrepreneurship platforms to provide technology transfer, achievement transformation, incubation and other services for enterprises and researchers. These platforms can promote the close integration of scientific and technological innovation and industrial development, and promote the transformation and upgrading of the biomedical industry.

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5.8. Strengthen International Cooperation and Exchange

The government can strengthen international cooperation and exchanges, jointly formulate drug patent protection policies, promote the international registration and marketing of drugs, and promote the international development of the biomedical industry. Specific measures include:

1) Establish international cooperation mechanism

The government can establish an international cooperation mechanism for drug patent protection with relevant countries to jointly formulate drug patent protection policies. Strengthening international cooperation can promote the international registration and marketing of drugs, and promote the international development of the biomedical industry. At the same time, it can also strengthen exchanges and cooperation with other countries to jointly solve the difficulties and problems in drug patent protection.

2) Participation in activities of international organizations

The government can actively participate in relevant activities and meetings of international organizations to understand the latest developments and trends of international drug patent protection. By participating in the activities of international organizations, we can strengthen exchanges and cooperation with other countries, and jointly explore the best practice and innovative mode of drug patent protection. At the same time, we can learn from the advanced experience and practices of other countries to improve the level of drug patent protection and management ability of our country.

6. Conclusion

In the biomedical industry, there is a close relationship between policy tools and innovation value chain. Policy tools are the methods and means adopted by the government to achieve specific policy objectives, while the innovation value chain is the connection and interaction between various links in the whole process of the biomedical industry from basic research to commercial production. Policy tools have a significant impact on innovation value chain, and the development of innovation value chain also has a certain feedback effect on policy tools.

In terms of policy tools, financial support, tax incentives and patent protection are important means in the biomedical industry policy. The financial support policy can promote basic research and application research, reduce the R&D cost of enterprises, improve the profit level of enterprises, so as to stimulate the R&D enthusiasm and innovation vitality of enterprises. Preferential tax policies can reduce the tax burden of enterprises, improve the profit level of enterprises, promote technology transfer and diffusion, and promote the development and technological progress of the biomedical industry. Patent protection policy can protect the innovation achievements of enterprises, promote technology transfer and diffusion, and promote the development and technological progress of the whole industry.

In terms of innovation value chain, the innovation value chain includes basic research, applied research, pilot production, clinical trials, registration and listing, etc. These links are interconnected and influence each other, and jointly promote the development and innovation of the biomedical industry. The innovation value chain has the characteristics of high risk, high investment and high return, which needs the necessary support and guarantee from the government. At the same time, the development of innovation value chain also provides reference and suggestions for the formulation and improvement of policy tools.

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