

# Research and Prospect of Quality Development of Pharmaceutical Technology in Drug Research and Development

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## ABSTRACT

Pharmaceutical technology is an indispensable and important link in drug research and development, which plays a key role in drug research and development quality. In the background of science and technology development, pharmaceutical technology has been greatly developed, but also to promote the quality of drug research and development, to provide more guarantee for people's health. In the new era, how to achieve pharmaceutical technology innovation, so as to further improve the quality of drug research and development, is an important research topic in the current related industries. This paper mainly revolves around quality of pharmaceutical technology development of a series of exploration, in the traditional drug development based on a better control of drug quality, the future of smart pharmaceutical green pharmaceutical development direction, aims to further enhance the pharmaceutical technology, promote the quality of research and development to promote the comprehensive, promote the steady development of the pharmaceutical industry as a whole.

## 1. Introduction

With the gradual development of science and technology, more and more new technologies and new processes have been widely used in drug research and development, which further promotes the optimization and innovation of pharmaceutical process and injects new vitality into the stable development of the entire pharmaceutical industry. Strengthening the promotion and development of pharmaceutical technology can steadily improve the quality of drug research and development, effectively control the drug cost and price, and promote the double improvement of economic benefits and social benefits. Therefore, the related industries

should strengthen the in-depth research of pharmaceutical process, promote the innovation of process, and create a broader space for the development of pharmaceutical process.

## 2. Importance

### 2.1 Promoting the Development Level of the Pharmaceutical Industry

With the gradual development of science and technology, drug research and development technology are improving day by day, which has produced great social benefits and brought great guarantee for human health. Different from other industries, the development of the

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medical industry is directly related to the life, health and safety of human beings, so as to ensure that people's body can get effective treatment. Through drug research and development, pharmaceutical technology development and quality improvement, to achieve reasonable control of drug prices. Through the reasonable control of drug prices, relieve the life pressure of patients' families, and truly take responsibility for human life and health.

## **2.2 Providing Better Drug Services**

Drug development has certain risks, and the drug market access threshold is high, especially in the stage of new drug promotion, which makes pharmaceutical enterprises bear great market risks. Only on the basis of ensuring the efficacy of drugs, the pharmaceutical process is optimized and reformed, and the production cost is reasonably controlled, can the economic benefits of pharmaceutical enterprises be guaranteed, and better drug services can be provided for people.<sup>[1]</sup> Therefore, it is necessary to carry out comprehensive reform and innovation on drug research and development and pharmaceutical process, promote the development level of pharmaceutical process, in order to truly guarantee the legitimate use of pharmaceutical enterprises, and lay the foundation for the long-term development of pharmaceutical enterprises. However, in this process, pharmaceutical enterprises should correctly realize their social responsibilities, strictly check pharmaceutical materials and equipment, and avoid problems such as low-quality drugs or fake drugs.

## **3. Current Development Status of Traditional Drug R&D and Pharmaceutical Process Quality**

### **3.1 Preparation Principle**

The quality of raw materials and equipment is an important material basis for improving pharmaceutical quality. Many drug quality problems are caused by problems with raw materials and equipment. Therefore, the quality of pharmaceutical raw materials should be strictly checked. In order to reduce the cost, some pharmaceutical companies buy low-quality raw materials, which not only reduces the efficacy, but also may seriously threaten people's lives and health. In addition, it is necessary to pay attention to strict quality storage and maintenance of pharmaceutical equipment. In the purchase of equipment, to choose high-quality pharmaceutical equipment, in order to ensure that the quality

of the drug guidance out of the standard. When many pharmaceutical enterprises purchase equipment, they do not pay attention to the detailed inspection of the equipment, resulting in the purchase of equipment can not meet the corresponding quality standards. And in the application of equipment, often in the production of different kinds of drugs, the use of the same equipment, cleaning is not sufficient, resulting in a great impact on the performance of the drug. In addition, many pharmaceutical enterprises do not pay attention to the maintenance and maintenance of equipment, after use, there is no comprehensive equipment disinfection, resulting in equipment rust phenomenon; In addition, the equipment is not cleaned in time, resulting in the residual drug residue in the equipment, once mixed into other drugs, it is easy to have a serious impact on the drug performance.<sup>[2]</sup>

### **3.2 Insufficient Personnel Quality**

Pharmaceutical personnel are the direct operators of pharmaceutical technology, so their comprehensive quality has a direct impact on the quality of drug development. In the actual pharmaceutical process, some positions of staff lack of responsibility, the work of enterprise is not high, often muddle along, cannot be fully engaged in the pharmaceutical work, it is easy to cause human error, resulting in problems in the pharmaceutical process; In addition, some companies don't pay attention to the professional training of comprehensive pharmaceutical personnel, resulting in a lack of professional knowledge and professional skill, pharmaceutical personnel seriously affect the normative use of pharmaceutical process, lead to promote the pharmaceutical effects, even drug quality problems, etc., for the long-term development of the pharmaceutical industry is very adverse.<sup>[3]</sup>

## **4. Drug Research and Development Pharmaceutical Process from Where to Improve the Quality**

### **4.1 Focusing on the Preparation Principle of Drug Research and Development Technology**

Drug research and development and production is a fine production activity, which requires a high level of research and development technology and preparation principle. Different preparation methods and principles will obtain different research and development effects, which may be positive or negative. Therefore, in the specific implementation of the pharmaceutical process,

different preparation principles should be comprehensively analyzed to give full play to the advantages of each preparation principle and ensure the safety and effectiveness of the application of pharmaceutical process to the greatest extent. In addition, the latest science and technology and biotechnology should be combined to optimize and upgrade the preparation scheme, so as to reduce the environmental pollution damage caused by the pharmaceutical process as much as possible.<sup>[4]</sup>

#### **4.2 Improving the Pharmaceutical Process from the Perspective of Quality Control of Raw Materials and Equipment**

Pharmaceutical raw materials and equipment are important material guarantee to ensure the quality of drug research and development. The quality of raw materials of drugs should be strictly controlled to ensure compliance with the standard requirements. Only in this way can the quality of drugs be guaranteed. Once there are quality problems in raw materials, it will lead to the inefficiency of the whole pharmaceutical engineering. In addition, strict quality control should be carried out on pharmaceutical equipment, and timely replacement and upgrading of equipment should be carried out to ensure compliance with pharmaceutical requirements. In addition, we should pay attention to the scientific and reasonable daily management of pharmaceutical equipment, timely cleaning and disinfection after the completion of use, to prepare for the next pharmaceutical application, to prevent rust and cross-contamination of drugs.

#### **4.3 Optimize the Pharmaceutical Process from The Aspect of Improving the Quality of Pharmaceutical Personnel**

Pharmaceutical personnel are the direct operators of pharmaceutical technology, their comprehensive quality level has a key impact on pharmaceutical quality. At present, the responsibility of some pharmaceutical personnel is not strong, lack of professional pharmaceutical skills, resulting in the overall pharmaceutical quality can not be effectively improved. Therefore, it is necessary to strengthen the supervision and management of pharmaceutical personnel, improve the quality level of pharmaceutical personnel, combine the actual situation, regularly carry out professional skills training, such as inviting experts in relevant fields to give lectures, strengthen the sense of responsibility, make up for the lack of professional knowledge; In addition, centralized skill training should be actively carried out

to improve the skill level of pharmaceutical personnel and ensure the normative operation of pharmaceutical process. Establish a scientific and reasonable assessment mechanism to strengthen the participation enthusiasm of pharmaceutical personnel; It is necessary to create good conditions to attract more high-quality pharmaceutical personnel to participate in the pharmaceutical industry, optimize the talent structure, strengthen work innovation, and inject new vitality into the quality development of pharmaceutical process.<sup>[5]</sup>

#### **4.4 Strengthening Supervision and Administration**

National regulatory authorities should give full play to their own functions, carry out comprehensive quality supervision and management of all links of the pharmaceutical process, promote the standardization and standard of the pharmaceutical process, so as to provide guarantee for the improvement of pharmaceutical quality. First, to the pharmaceutical raw materials and production equipment, such as the implementation of comprehensive inspection and testing, especially to the quality of raw materials and equipment disinfection link for strict supervision, to ensure the standardization of the work process; Second, to implement a comprehensive supervision of the pharmaceutical process, to ensure the pharmaceutical personnel's pharmaceutical qualifications, to have professional skills, to ensure the standardization of pharmaceutical operations, for illegal operations to give a severe warning; Third, in the pharmaceutical end link, we should pay attention to the sampling test of all drugs, to ensure that the quality of drugs meets the standard requirements, and to review its side effects. Only after all drugs meet the standard, can we be allowed to leave the factory for sale.<sup>[6]</sup>

### **5. The Future Development Direction and Expectation of New Pharmaceutical Technology**

#### **5.1 Internal Improvement of Chemical Pharmaceutical Process**

With the gradual development of science and technology, chemical pharmaceutical technology has been rapidly developed and widely used. Under the background of science and technology development, continuous optimization and improvement of chemical pharmaceutical process should be carried out according to the actual needs of current social development, so as to promote the innovation of pharmaceutical pro-

cess. Practice has proved that through the internal improvement and innovation of pharmaceutical process, not only can greatly reduce the cost of drug R&D and manufacturing, but also can promote the efficiency of pharmaceutical process, to meet the new needs of the current society for drug R&D. With the gradual development of the society, the realization of the internal improvement of the pharmaceutical process has gradually become an important development trend of the pharmaceutical industry, and with the continuous development of science and technology, its improvement ideas and approaches will be more and more broad, for the development of the pharmaceutical process to create a better prospect.<sup>[7]</sup> Recently, China has introduced a membrane filtration technology, which is environmentally friendly and low energy consumption technology, and effectively reduces the pollution problem in the chemical and pharmaceutical process. However, the current production equipment has become a major problem in the development of drug research and development and pharmaceutical technology, because part of the equipment is difficult to meet the pharmaceutical standards. Therefore, it is necessary to actively introduce advanced production equipment to create conditions for internal process improvement. It can be seen that the internal improvement of chemical pharmaceutical process effectively improves the quality of pharmaceutical process.

## **5.2 Gradual Development of Biotechnology and Pharmaceuticals**

With the development of biotechnology research, it has gradually realized the comprehensive combination with the pharmaceutical field, and further expanded the research and development way and space in the pharmaceutical field. In the new era, people pay more and more attention to the development of biotechnology, and through in-depth research and development, biotechnology has provided a great help and convenience to the development of human society, but also provides a strong support to the pharmaceutical field. Although the biological process is developed from the traditional biological pharmaceutical technology, there are many differences with the traditional pharmaceutical methods, which is both an inheritance and an innovation, and has made a great contribution to the development of the quality of the pharmaceutical process. At present, countries all over the world have strengthened the research and development of biotechnology, and further deepened the integration of biotechnology and pharmaceutical technology.<sup>[8]</sup>

## **5.3 Green Pharmaceutical Technology Is Gradually Flourishing**

In the new era, with the gradual deepening of the concept of green environmental protection, the application of drug research and development and pharmaceutical technology has also gradually reflected the need for green environmental protection. The development of green technology has promoted the healthy and positive development direction of the pharmaceutical industry. The intelligent preparation process has realized the gradual transformation from chemical pharmaceutical to green pharmaceutical, reduced pollution and energy consumption, and truly reflected the healthy development direction of the quality of pharmaceutical technology of drug research and development.

## **6. Conclusion**

Study of pharmaceutical research process quality need long-term persistence and efforts, relevant personnel to related problems to conduct a comprehensive analysis of the pharmaceutical technology, and pharmaceutical process each link to conduct a comprehensive innovation and optimization, especially the pharmaceutical raw materials, equipment and R&D staff strict quality control, create good basic conditions for the development of pharmaceutical technology. In addition, it is necessary to combine the development of science and technology, promote the internal improvement of pharmaceutical process, strengthen the full integration with biotechnology, and develop green pharmaceuticals such as intelligent pharmaceuticals in the future, so as to create new development directions for the development of pharmaceutical process, expand development space, and provide a solid foundation for improving the quality of drug research and development. Through the research on the development of drug research and development and pharmaceutical technology, it can effectively improve the pharmaceutical efficiency, reduce the cost, reduce the price of drugs, produce good social benefits, but also provide guarantee for the comprehensive benefits of pharmaceutical enterprises.

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