

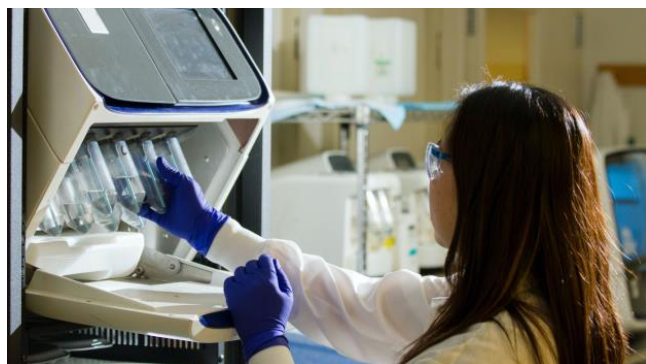
# 10 Biotechnology Career Paths

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The Biotechnology industry is currently thriving, with the global Biotechnology market value predicted to reach [\\$727.1 billion by 2025](#). In the US alone, there are more than [800,000 people employed](#) in the Biotech industry, with the employment rate expected to [grow by 5%](#) between 2019 and 2029.

New roles within the industry are continuously being created across the globe, particularly in Medical Biotechnology where technological advancements and digital transformation are creating more opportunities than ever before.

In this article, we summarize **10 career paths within Biotechnology**, with an outline of each role's key responsibilities...

## Biotechnologist

A Biotechnologist studies the attributes of living organisms to develop new products, processes, and technologies to address some of the biggest healthcare problems facing

society. They are often responsible for creating, conducting, and monitoring experiments that aim to develop products and treatments designed to improve human quality of life. A lot of a Biotechnologist's work is undertaken in a laboratory, often within a controlled environment.

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### **Biomedical Engineer**

A Biomedical Engineer is responsible for investigating the engineering aspects of biological processes in living organisms, and for designing and developing software and hardware solutions for medical applications. They may also design medical devices such as those used to replace body parts or those used to diagnose disease, and may be involved in designing, installing, maintaining, and inspecting such equipment in healthcare facilities. Biomedical Engineers must evaluate the safety and effectiveness of this equipment, and often train healthcare professionals on proper usage.

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### **Biochemist**

Working to improve quality of life, Biochemists study the chemical principles of living organisms and biological processes in order to understand the potential effects of new and existing medicines. For example, they may research the genetic mutations that lead to cancer, with the aim of understanding how medicine will alter that specific biological process. Mostly working on research teams and in a laboratory setting, Biochemists may manage their own teams to conduct research projects and must also prepare technical reports and present research findings to relevant parties.

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### **Medical Scientist**

Medical Scientists investigate human disease and conduct research to develop and improve methods of prevention and treatment to improve human health. They may be involved in all stages of research, from planning experiments and designing clinical studies to forming hypotheses and writing original papers for publication in medical journals. Medical Scientists also work closely with other health departments and relevant parties to assist with the development of clinical trials and programs designed to help prevent disease.

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### **Biological Technician**

Biological Technicians assist scientists with conducting laboratory experiments. They are involved in everything from collecting samples for analysis, maintaining and cleaning equipment, setting up and operating equipment, and for the correct documentation, storage and transportation of collected samples.

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### **Microbiologist**

Microbiologists study the microscopic organisms that cause infections, including bacteria and viruses. Using their in-depth knowledge of microbes, they analyse the growth of these organisms to understand their characteristics with the aim of using this information to prevent, diagnose and treat infectious diseases. They primarily work in laboratories where monitoring and analysis of microbial cultures take place.

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### **Process Development Scientist**

Process Development Scientists are responsible for optimising the performance of manufacturing systems and processes to improve the efficiency of product development. They identify and develop new manufacturing processes and implement controls to ensure these processes can be replicated in a way that produces the best outcome. In order to assess the productivity of the manufacturing process, they must consider factors including cost, revenue, regulations and sourcing of materials.

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### **Biomanufacturing Specialist**

Biomanufacturing Specialists use biological systems to manufacture commercial biomaterials. They may be involved in both upstream and downstream processes as well as handling packaging and labelling equipment. Following cGMP guidelines, Biomanufacturing Specialists collaborate with Process Development teams to effectively integrate new products into manufacturing and to identify areas where procedures may be developed to make manufacturing more reliable, sustainable and efficient.

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### **Epidemiologist**

Epidemiologists study the patterns, causes and effects of disease and investigate the source of outbreaks to prevent further spread. They collaborate with government agencies and other relevant parties to provide recommendations on preventative measures and to support new health strategies. Epidemiologists use data and statistics gathered from their investigations to calculate risks and rates, and to use this data to make recommendations for further prevention.

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### **R&D Scientist**

Research and Development Scientists conduct research to improve and develop new and existing products and technologies, ensuring all products adhere to safety regulations and other relevant standards. Collaborating with fellow experts, they will

provide product recommendations, perform product reviews, conduct research in laboratories, streamline product requirements and guidelines and maintain close records of procedures.

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