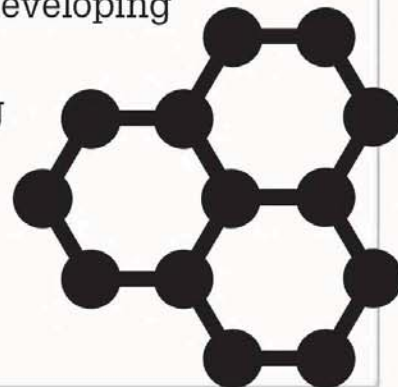


BIOTECHNOLOGIST



JOB DESCRIPTION

At the cutting edge of science, biotechnologists use their knowledge of how living organisms function to find solutions to problems and develop new products. Their work includes developing new vaccines against diseases, improving animal feed, growing crops that are more resistant to drought and pests, and improving everyday products, such as cheese and bread.



SALARY

Biotechnologist ★★☆☆☆
Senior biotechnologist ★★★★★

INDUSTRY PROFILE

Many global opportunities •
Wide range of potential employers •
Best job prospects in industrial and medical specialty areas

AT A GLANCE



YOUR INTERESTS Laboratory work • Scientific investigation • Biology • Chemistry • Physics • Mathematics • Engineering



ENTRY QUALIFICATIONS A degree or graduate qualification in a biological- or chemical-related discipline is required for this career.



LIFESTYLE Work hours are regular, but biotechnologists may have to work in the evenings, on weekends, or in shifts to check on research experiments.



LOCATION For the most part, biotechnologists of all levels work in sterilized laboratories in research or industrial buildings.



THE REALITIES Ground-breaking discoveries can be exciting, but the work can also be repetitive and frustrating. Many hours are spent in the laboratory.

RELATED CAREERS

- ▶ **MICROBIOLOGIST** *see pp. 138–139*
- ▶ **FOOD SCIENTIST** *see pp. 142–143*
- ▶ **CHEMICAL ENGINEER** *see pp. 180–181*
- ▶ **BIOCHEMIST** Conducts scientific research into chemical reactions that take place in living organisms. Biochemists analyze the effects of drugs, foods, allergies, and disease on cells, proteins, and DNA.
- ▶ **BIOMEDICAL RESEARCH SCIENTIST** Performs clinical trials and lab tests to research methods of treating disease and other health-related conditions.

In the United States, the biopharmaceutical industry grew by more than 40 percent between 2002 and 2011.

CAREER PATHS

“Biotechnologist” is a broad term that encompasses many roles, from high-level research to manufacturing. To work in research, you will need a relevant degree. After specializing in one field, you may find it difficult to move into another.

TECHNICIAN You may be able to begin as a trainee laboratory technician while studying for a degree or industry qualification.

GRADUATE A degree in biology, chemistry, plant sciences, or biochemistry is required if you want to become a biotechnologist.



BIOTECHNOLOGIST

There are various opportunities to specialize, but each of these strands of biotechnology require further study.



BIOPHARMACEUTICAL ANALYST

Applies advanced techniques, such as genetic engineering, to develop new drugs used for treating diseases, such as arthritis and high blood pressure.



CLINICAL SCIENTIST

Works in a hospital carrying out clinical studies and analyzing data to develop new therapies, or providing diagnoses for medical staff.



BREWING BIOTECHNOLOGIST

One example of a specific foods application. Discovers methods of brewing and storing fermented products.



FUELS AND CHEMICALS BIOTECHNOLOGIST

Conducts research into the manufacture of cleaner fuels, such as bioethanol, or novel materials, such as biodegradable plastics, which are far more eco-friendly than many of the current products in use.

SKILLS GUIDE



Innovation and a willingness to learn new technologies as they emerge.



Logical and analytical approach to performing experiments and conducting research.



Problem-solving skills and the ability to formulate ideas, plan experiments, and interpret results.



Good computer skills to record and analyze experimental and product data.



The perseverance and motivation to rethink and restart experiments that may not work.



The ability to handle scientific equipment and take measurements very carefully.