

INTRODUCTION TO BIOCHEMISTRY

Biochemistry is the study of the chemistry of living things. This includes organic molecules and their chemical reactions. Most people consider biochemistry to be synonymous with molecular biology.

What Is Biochemistry?

Biochemistry is the study of the chemistry of living things. This includes organic molecules and their chemical reactions. Most people consider biochemistry to be synonymous with molecular biology.

What Types of Molecules Do Biochemists Study?

The principal types of biological molecules or biomolecules are:

- carbohydrates
- lipids
- proteins
- nucleic acids

Many of these molecules are complex molecules called polymers, which are made up of monomer subunits. Biochemical molecules are based on carbon.

What Is Biochemistry Used For?

- Biochemistry is used to learn about the biological processes which take place in cells and organisms.
- Biochemistry may be used to study the properties of biological molecules, for a variety of purposes. For example, a biochemist may study the characteristics of the keratin in hair so that a shampoo may be developed that enhances curliness or softness.

- Biochemists find uses for biomolecules. For example, a biochemist may use a certain lipid as a food additive.
- Alternatively, a biochemist might find a substitute for a usual biomolecule. For example, biochemists help to develop artificial sweeteners.
- Biochemists can help cells to produce new products. Gene therapy is within the realm of biochemistry. The development of biological machinery falls within the realm of biochemistry.

What Does a Biochemist Do?

Many biochemists work in chemistry labs. Some biochemists may focus on modeling, which would lead them to work with computers.

Some biochemists work in the field, studying a biochemical system in an organism. Biochemists typically are associated with other scientists and engineers. Some biochemists are associated with universities and they may teach in addition to conducting research. Usually, their research allows them to have a normal work schedule, based in one location, with a good salary and benefits.

What Disciplines Are Related to Biochemistry?

Biochemistry is closely related to other biological sciences that deal with molecules. There is considerable overlap between these disciplines:

- Biomedical
- Molecular Genetics
- Pharmacology
- Molecular Biology
- Chemical Biology