American Journal of Physiology, Biochemistry and Pharmacology, 2023
VOL 13, NO. 1, PAGES 01

COMMENTARY

Open Access

Organic Chemistry: The Basis for Understanding Biological Substances

Eugenio Woods*
Department of Human Anatomy, University of Padua, Padua, Italy

ARTICLE HISTORY
Received: 02-Jan-2023, Manuscript No. AJPBP-23-88826;
Editor assigned: 05-Jan-2023, PreQC No. AJPBP-23-88826 (PQ);
Reviewed: 20-Jan-2023, QC No AJPBP-23-88826;
Revised: 26-Jan- 2023, Manuscript No. AJPBP-23-88826 (R);
Published: 03-Feb- 2023

Description

Biochemistry or biological chemistry is the scientific study of chemical processes within and related to living beings. This interdisciplinary field combines principles from both chemistry and biology to investigate the chemical reactions and molecules that are fundamental to life. Biochemistry encompasses various subfields, including structural biology, enzymology, and metabolism.

Chemistry is a broad field that plays a crucial role in understanding the natural world. Chemists use different types of chemistry, including inorganic, organic, biochemical, environmental, and nuclear chemistry, to study the molecular and chemical components of the fields they are investigating, such as biology and the environment. The study of matter and the substances that make it up is the primary focus of chemistry. It also examines the properties of substances and the reactions they undergo to form new compounds.

Organic chemistry is a subfield of chemistry that deals with the study of fundamental chemical processes that create both familiar and novel compounds. Organic chemistry studies the chemistry of molecules such as DNA, proteins, and carbohydrates, which make up living organisms, as well as the chemistry of materials that have the potential to change the course of human history. Organic chemistry also studies the basic chemical processes that create both familiar and novel molecules.

Carbon is the chemical element that forms the basis of organic chemistry. It is marked apart by the unparalleled chemical variety compared to all other chemical elements. The unique properties of carbon are attributed to the relatively strong bonds between carbon atoms, which contribute to its diversity. All organic compounds contain carbon, hence studying organic chemistry is the study of carbon-based molecules and the reactions and assembly processes go through them.

Organic chemistry mainly focuses on the study of organic molecules, which may or may not be present in living creatures. It examines their reactions and mechanisms, physical and chemical properties, and the processes that drive these reactions. Biochemistry, on the other hand, focuses on the study of internal biological processes and reactions. Biochemists study the chemistry of molecules found inside living organisms, including proteins, carbohydrates, nucleic acids, lipids, and other biomolecules. Biochemistry is concerned with more intricate processes like metabolism, translation, transcription, and genetic alterations in biomolecules.

The study of organic compounds made up of bonds between carbon, hydrogen, and oxygen constitutes organic chemistry, which is the basis for the study of many biological substances. Organic chemistry investigates nearly all organic molecules, including alkanes, alkynes, and alcohols, along with their physical and chemical properties. Biochemistry, on the other hand, examines the chemicals found in our bodies, including proteins, carbohydrates, and nucleic acids.

The main focus of organic chemistry is on the fundamental ideas behind reactions, explaining how and why reactions happen, and maybe even deciphering a few perplexing graphs. Organic chemical reactions primarily involve carbon, hydrogen, oxygen, and nitrogen. On the other hand, biochemistry is far broader and deals with DNA, RNA, and genetic alterations in biomolecules, in addition to the bodily activities. Biochemistry, as a field, is vast and has various applications, including pharmaceuticals, agriculture, and food science.

In conclusion, biochemistry and organic chemistry are two essential fields that help us understand the molecular and chemical processes that make up living organisms. While organic chemistry mainly deals with carbon-based molecules and their reactions, biochemistry deals with the complex processes that occur within living organisms. Together, these fields have numerous applications, including drug discovery, agriculture, food science, and many more.

Contact: Eugenio Woods, E-mail: eugeniowoods@gmail.com