

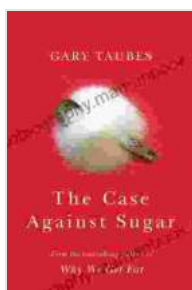
Organic Chemistry Downloads Gary Taubes: A Guide to Core Concepts and Applications

Organic chemistry, a branch of chemistry that studies the structure, properties, and reactions of organic compounds, is a vast and complex field. However, it is also a fascinating one, with applications in countless industries and everyday life.

This article will introduce you to the basics of organic chemistry. We will cover the following topics:

- What is organic chemistry?
- The different types of organic compounds
- The structure of organic molecules
- The properties of organic molecules
- The reactions of organic molecules

By the end of this article, you will have a solid foundation in organic chemistry and be well on your way to understanding this fascinating field.



Organic Chemistry (2-downloads) by Gary Taubes

★★★★☆ 4.5 out of 5

Language : English

File size : 74874 KB

Screen Reader : Supported

Print length : 1392 pages



Organic chemistry is the study of the structure, properties, and reactions of organic compounds. Organic compounds are compounds that contain carbon atoms. Carbon is a unique element in that it can form strong bonds with other carbon atoms, as well as with other elements such as hydrogen, oxygen, nitrogen, and sulfur. This ability to form strong bonds allows carbon to form a wide variety of molecules, including all of the molecules that make up living organisms.

Organic chemistry is a vast and complex field, but it can be divided into a few basic concepts:

- **Structure:** The structure of an organic molecule refers to the way that its atoms are arranged. The structure of a molecule can be represented by a structural formula, which shows the arrangement of the atoms in a molecule.
- **Properties:** The properties of an organic molecule refer to its physical and chemical characteristics. The properties of a molecule are determined by its structure. For example, the boiling point of a molecule is determined by its molecular weight and the strength of the intermolecular forces between its molecules.
- **Reactions:** The reactions of organic molecules refer to the ways that they can interact with other molecules. Organic molecules can react with each other in a variety of ways, including addition, substitution, elimination, and rearrangement reactions.

There are many different types of organic compounds, but they can be classified into a few basic groups:

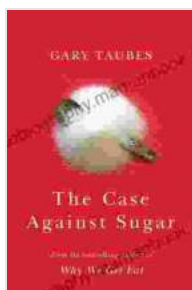
- **Aliphatic compounds:** Aliphatic compounds are organic compounds that contain only carbon and hydrogen atoms. Aliphatic compounds can be classified into three subgroups:
 - Alkanes: Alkanes are aliphatic compounds that contain only single bonds between carbon atoms.
 - Alkenes: Alkenes are aliphatic compounds that contain one or more double bonds between carbon atoms.
 - Alkynes: Alkynes are aliphatic compounds that contain one or more triple bonds between carbon atoms.
- **Aromatic compounds:** Aromatic compounds are organic compounds that contain a benzene ring. Benzene rings are six-membered rings of carbon atoms that are arranged in an alternating single and double bond pattern.
- **Functionalized compounds:** Functionalized compounds are organic compounds that contain a functional group. Functional groups are groups of atoms that are attached to a carbon atom and that give the molecule its characteristic properties. Common functional groups include alcohols, aldehydes, ketones, and carboxylic acids.

The structure of an organic molecule is determined by the way that its atoms are arranged. The arrangement of the atoms in a molecule can be represented by a structural formula. Structural formulas show the arrangement of the atoms in a molecule by using lines to represent bonds between atoms and symbols to represent the atoms themselves.

For example, the structural formula of ethane, a simple aliphatic compound, is:



This structural formula shows that ethane is composed of two carbon



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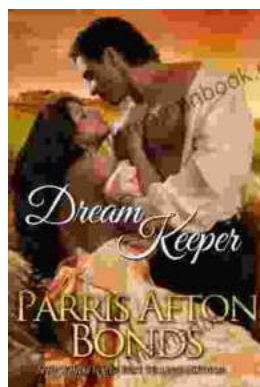
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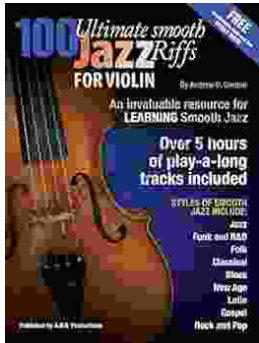
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