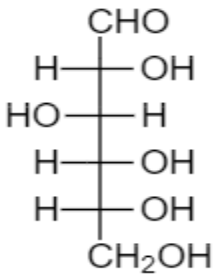
Biomolecules are numerous substances produced by cells and living organisms. Biomolecules have a wide range of sizes and structures and perform a vast array of functions. The four major types of biomolecules are carbohydrates, lipids, nucleic acids, and proteins.

Among four, **carbohydrates** are probably the most abundant and widespread organic substances in nature, and they are essential constituents of all living things. Carbohydrates are formed by green plants from carbon dioxide and water during the process of photosynthesis. Carbohydrates serve as energy sources and as essential structural components in organisms; in addition, part of the structure of nucleic acids, which contain genetic information, consists of carbohydrate.

Carbohydrate is the class of naturally occurring compounds and derivatives formed from them. In the early part of the 19th century, substances such as wood, starch, and linen were found to be composed mainly of molecules containing atoms of carbon (C), hydrogen (H), and oxygen (O). The general formula of carbohydrate is $(CH_2O)_n$.

Carbohydrates, or saccharides (saccharo is Greek for "sugar") are polyhydroxy aldehydes or ketones, or substances that yield such compounds on hydrolysis.



Glucose

It is abundant and widespread class of natural organic compounds that includes sugars, starch, and cellulose. They are commonly classified as monosaccharides (simple sugars; e.g., glucose, fructose), disaccharides (2-unit sugars; e.g., sucrose, lactose), oligosaccharides (3–10 or so sugars), and polysaccharides (large molecules with up to 10,000 monosaccharide units, including cellulose, starch, and glycogen). Green plants produce carbohydrates by photosynthesis. In most animals, carbohydrates are the quickly accessible reservoir of energy.