Carbohydrates

**Carbohydrates**

Carbohydrates are biological molecules made of carbon, hydrogen, and oxygen. This composition gives carbohydrates their name: they are made up of carbon (carbo-) plus water (-hydrate). They have the general formula Cn(H2O)m, where n>= 3. Carbohydrates belong to three categories: monosaccharides, oligosaccharides, and polysaccharides.

**Monosaccharides**

Monosaccharides are simple sugars, the most common of which is glucose. Monosaccharides have a formula of (CH2O)n​, and they typically contain three to seven carbon atoms.

Sugars are also named according to their number of carbons: some of the most common types are trioses (three carbons), pentoses (five carbons), and hexoses (six carbons).

**Oligosaccharides**

Oligosaccharides is a saccharide polymer containing a small number (typically 2 to 20) monosaccharides. Oligosaccharides can have many functions including cell recognition and cell binding. For example, glycolipids have an important role in the immune response.

Oligosaccharides that consist of two monosaccharides are called disaccharides. They are soluble in water, have sweet taste and are mainly used to receive energy.

**Polysaccharides**

A long chain of monosaccharides linked by glycosidic bonds is known as a polysaccharide. The chain may be branched or unbranched and may contain different types of monosaccharides. Starch, glycogen, cellulose, and chitin are some major examples of polysaccharides important in living organisms.

Diagram, schematic

Description automatically generated

Glucose formula