

Cells store energy for long-term use in the form of fats. Lipids also provide insulation from the environment for plants and animals (Figure (PageIndex{1})). For example, they help keep aquatic birds and mammals dry when forming a protective layer over fur or feathers because of their water-repellant hydrophobic nature.

Triglycerides???made from the bonding of glycerol and three fatty acids???are a form of long-term energy storage in animals. Animals can make most of the fatty acids they need. Triglycerides can be both made and broken down through parts of the glucose



Glycogen, a polymer of glucose, is an energy storage molecule in animals. When there is adequate ATP present, excess glucose is shunted into glycogen for storage. Glycogen is made and stored in both liver and muscle. The glycogen will be hydrolyzed into



Energy-rich molecules such as glycogen and triglycerides store energy in the form of covalent chemical bonds. Cells synthesize such molecules and store them for later release of the energy. The second major form of biological energy storage is electrochemical and takes the form of gradients of charged ions across cell membranes .

A lipid is any of various organic compounds that are insoluble in water. They include fats, waxes, oils, hormones, and certain components of and function as energy-storage molecules and chemical messengers. Together with proteins carbohydrates, lipids are one of the principal structural components of living.

Adenosine triphosphate (ATP), energy-carrying molecule found in the cells of all living things. ATP captures chemical energy obtained from the breakdown of food molecules and releases it to fuel other cellular processes. Learn more about the structure and function of ATP in this article.

2/3







MOLECULE IS CALLED

LONG TERM ENERGY STORAGE

ATP or Adenosine 5"-triphosphate is the most abundant short-term energy storage molecule in cells. It is composed of a nitrogen base (adenine), three phosphate groups, and a ribose sugar. Proteins, lipids, carbohydrates, and nucleic acids are the most common long-term energy storage molecules in cells.

Glycogen is an analogue of starch, a glucose polymer that functions as energy storage in plants. It has a structure similar to amylopectin (a component of starch), but is more extensively branched and compact than starch. Both are white powders in their dry state.



