

Is ATP a storage molecule?

ATP is not a storage molecule for chemical energy; that is the job of carbohydrates, such as glycogen, and fats. When energy is needed by the cell, it is converted from storage molecules into ATP. ATP then serves as a shuttle, delivering energy to places within the cell where energy-consuming activities are taking place.

What molecule stores energy in a food molecule?

Food consists of organic (carbon-containing) molecules which store energy in the chemical bonds between their atoms. Organisms use the atoms of food molecules to build larger organic molecules including proteins, DNA, and fats (lipids) and use the energy in food to power life processes.

Which molecule is the most abundant energy carrier molecule in cells?

Adenosine 5'-triphosphate, or ATP, is the most abundant energy carrier molecule in cells. This molecule is made of a nitrogen base (adenine), a ribose sugar, and three phosphate groups. The word adenosine refers to the adenine plus the ribose sugar. The bond between the second and third phosphates is a high-energy bond (Figure 5).

How is energy stored in a complex molecule used to make ATP?

Molecular energy stored in the bonds of complex molecules is released in catabolic pathways and harvested in such a way that it can be used to produce ATP. Other energy-storing molecules, such as fats, are also broken down through similar catabolic reactions to release energy and make ATP (Figure 6.2.4 6.2. 4).

What are the two most important energy-carrying molecules?

Two of the most important energy-carrying molecules are glucose and adenosine triphosphate, commonly referred to as ATP. These are nearly universal fuels throughout the living world and are both key players in photosynthesis, as shown below.

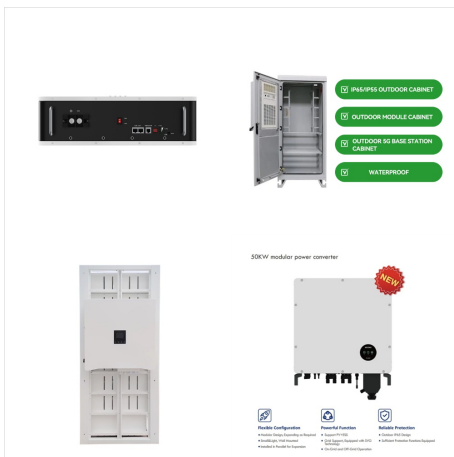
Which molecule carries more energy glucose or ATP?

Although it carries less energy than glucose, its structure is more complex. The "A" in ATP refers

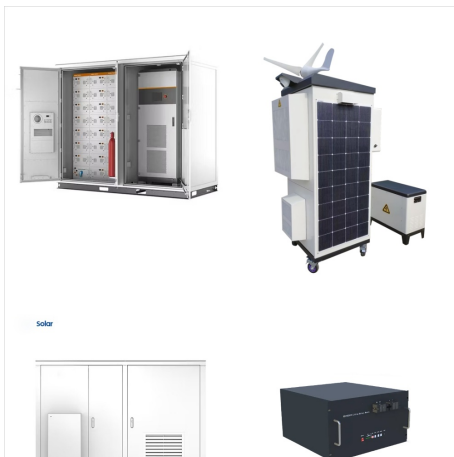
# WHAT MOLECULE GROUPS ARE INVOLVED IN LONG TERM ENERGY STORAGE



to the majority of the molecule,adenosine,a combination of a nitrogenous base and a five-carbon sugar. The &quot;TP&quot; indicates the three phosphates,linked by bonds which hold the energy actually used by cells.



long-term storage for energy and protects body.  
What are phospholipids? chain of carbon and hydrogen atoms with a carboxyl group at one end.  
Why is Saturated different for Unsaturated? NO DOUBLE BONDS and linear molecule. What is a Unsaturated Fatty acid? a fatty acid with 1 or more double bonds BETWEEN CARBON ATOMS, a liquid at room



ATP is the molecule that organisms use to temporarily store energy. 1 / 55. 1 / 55. Flashcards; Learn; Test; Match; Q-Chat; Long-term energy storage is in the form of lipids and carbohydrates. Short-term energy storage is in the form of ATP. ATP releases its energy when the bond between the 2nd and 3rd phosphate group is broken. How

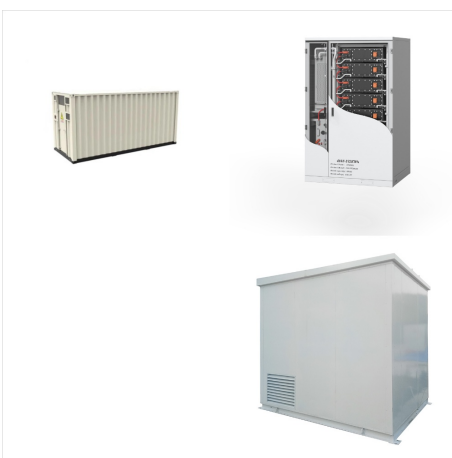
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The catalyst of a chemical reaction A reactant molecule that binds to the active site of an enzyme The products of a chemical reaction The location on the enzyme where chemical reactions take place. 2. Molecules that are used by cells for long-term energy storage. Proteins that bind to the active site of a catalyst.



large molecule formed by joining smaller organic molecules together, usually by dehydration synthesis reaction. groups that give different amino acids different properties. used by cells for long-term energy storage; examples are fats, oils, waxes, and steroids. saturated fat.



The body is a complex organism, and as such, it takes energy to maintain proper functioning. Adenosine triphosphate (ATP) is the source of energy for use and storage at the cellular level. The structure of ATP is a nucleoside triphosphate, consisting of a nitrogenous base (adenine), a ribose sugar, and three serially bonded phosphate groups. ATP is commonly ???

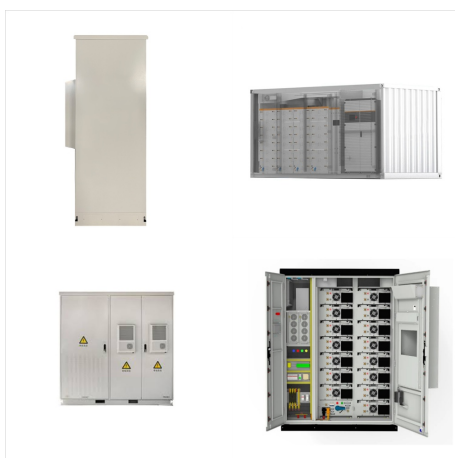
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Lipids are organic molecule molecules that are soluble in organic solvents, such as chloroform/methanol, but sparingly soluble in aqueous solutions. These solubility properties arise since lipids are mostly hydrophobic. One type, triglycerides, is used for energy storage since they are highly reduced and get oxidized to release energy.



II. Both DNA, which stores genetic information and encodes protein sequences, and RNA, which is involved in the direct production of proteins, are nucleic acids. III. Nucleic acids are usually insoluble in water and are used for long term energy storage. IV. Glucose, cellulose, and starch are examples of nucleic acids found in most cells.



Cells store energy for long-term use in the form of lipids called fats. containing 12???18 carbons. In a fat molecule, a fatty acid is attached to each of the three oxygen atoms in the ???OH groups of the glycerol molecule with a covalent bond However, fats do have important functions. Fats serve as long-term energy storage. They also



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3. **\*\*Why Fat?\*\***: Animals store energy in the form of fat because it is efficient and can be kept for long durations. When the body requires energy, it can break down these fats to release energy. In summary, fat is the molecule that animal cells use for long-term energy storage, making it the correct choice from the options provided.



> Triglycerides - involved in long-term energy storage in adipose connective tissue. > Glucose - is stored in the liver and muscle tissue in the form of the polymer reaction that involves the movement of electrons from one chemical structure to another. > Oxidation- occurs as a molecule, atom, or ions LOSES an electron(s) and thus



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The first type is involved with long term energy storage in adipose tissue and is known as \_\_\_\_\_. The second type, \_\_\_\_\_, is stored in the liver and muscle tissue in the form of glycogen. \_\_\_\_\_ is the third molecule; it is stored in all cells, is produced continually, and ???



Protein- no "main function" because proteins do so much Carbohydrates- energy storage (short term) Lipids- energy storage (long term) Nucleic Acid: Informational molecule that stores, transmits, and expresses our genetic information. Provide ???



They provide energy quickly through glycolysis and passing of intermediates to pathways, such as the citric acid cycle, and amino acid metabolism (indirectly). It is important, therefore, to understand how these important molecules are used and stored.

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If NASA found a novel life form, we would expect it to use energy molecules based on similar principles as lifeforms on Earth. The organism would likely use molecules with \_\_\_\_\_ bonds. It might use two separate molecules, one serving as a rapidly utilizable energy currency and another molecule serving as long-term energy storage



Study with Quizlet and memorize flashcards containing terms like If a person wants to lose weight, which of the following will contribute to the necessary Calorie imbalance? a. fidgeting more b. eating less c. exercising more d. all of the above e. b and c, Which snack will provide the highest number of Calories? a. 25 g sugar, 5 g protein, 0 g fat b. 30 g sugar, 0 g protein, 5 g fat c. 10 g



Coenzyme A (CoA) is charged with an Acetyl group (2 carbon compound) to generate Acetyl-CoA and a CO<sub>2</sub>. When there is an excess of carbohydrates, the Acetyl-CoA is used as a starting ???

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Identify the specific molecule from each description. Learn with flashcards, games, and more ??? for free. provides long-term energy storage for plants. starch. genetic material. DNA. steroid that makes up part of the cell membranes. cholesterol. 3-carbon "backbone" of a fat. glycerol. provides short-term energy storage for animals. glycogen.



This strategy allows energy to be released in small, controlled amounts. An example starts in chlorophyll, the green pigment present in most plants, which helps convert solar energy to chemical energy. When a chlorophyll molecule absorbs light energy, electrons are excited and "jump" to a higher energy level. The excited electrons then bounce



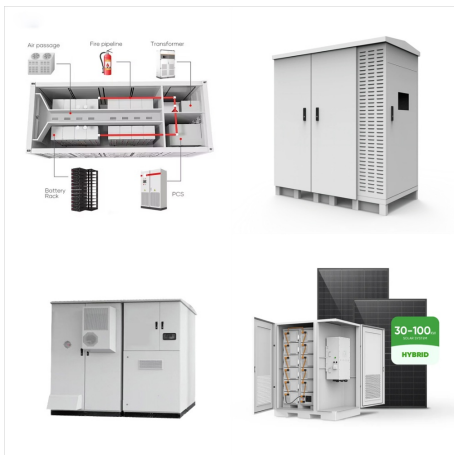
An ATP molecule is unstable and primed to release energy because its \_\_\_\_\_ groups are negatively charged and repel each other. starch fats glycogen. Select all types of molecules that cells use for long-term energy storage. Metabolism. Where is the most energy stored in an ATP molecule? active. The region where a substrate (reactant) binds



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lipid, any of a diverse group of organic compounds including fats, oils, hormones, and certain components of membranes that are grouped together because they do not interact appreciably with water. One type of lipid, the triglycerides, is sequestered as fat in adipose cells, which serve as the energy-storage depot for organisms and also provide thermal insulation.



Cells store energy for long-term use in the form of fats. containing 12-18 carbons. In a fat molecule, a fatty acid is attached to each of the three oxygen atoms in the  $-OH$  groups of the glycerol molecule with a covalent bond (Figure 2). fried foods and other "fatty" foods leads to weight gain. However, fats do have important



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.

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Enzymes are examples of which of these molecule groups? carbohydrates. lipids. proteins. nucleic acids. 16 of 19. Term. Table sugar is a type of carbohydrate. TRUE. FALSE. Which of these molecule groups is involved in long-term energy storage? Choose matching definition.

carbohydrates. lipids. proteins. nucleic acids. Don't know? 15 of 19



1 glucose molecule, on the other hand, when broken down by glycolysis and the citric cycle, yields only 40 ATP molecules. (For the uninitiated, ATP is known as the energy currency of the cell. The energy to do work comes from breaking a bond from this molecule).



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 ???

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Lipids, specifically triglycerides, are considered to be a long-term storage form of energy in organisms. Lipids are highly efficient molecules for storing energy due to their high energy density



The reason that these bonds are considered "high-energy" is because the products of such bond breaking???adenosine diphosphate (ADP) and one inorganic phosphate group (P i)???have considerably lower free energy than the reactants: ATP and a water molecule. Because this reaction takes place with the use of a water molecule, it is considered