

Why is ATP a good energy storage molecule?

ATP is an excellent energy storage molecule to use as “currency” due to the phosphate groups that link through phosphodiester bonds. These bonds are high energy because of the associated electronegative charges exerting a repelling force between the phosphate groups.

Can ATP be stored in excess?

I just learned that ATP can not be stored in excess and is only made by the body when it is needed. What makes ATP, like glucose and fat is what is stored under the skin or wherever.

Why is ATP less stable than other biological storage molecules?

ATP is also significantly less stable than other forms of biological storage molecules, such as fat and glycogen. ATP will also slowly hydrolyze by itself when placed in water. The other methods of storage are likely simply more efficient. Efficiency depends on the purpose.

Why is ATP not able to be stored in a cellular environment?

There is a high rate of ATP dependent processes in the cell such that ATP is immediately used up just after it has been synthesized. ATP is very unstable in a water environment. It is easily hydrolyzed thus it is not ideal for storage in the very aqueous cellular environment.

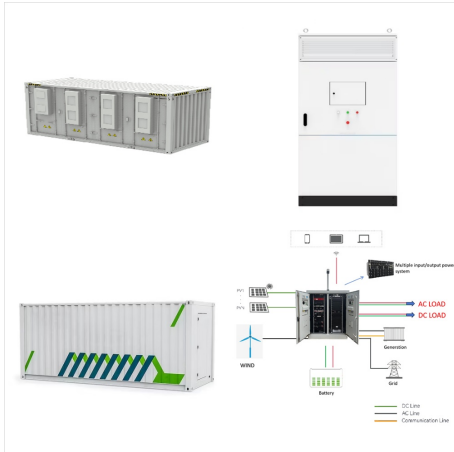
Why is ATP a rechargeable battery?

Because the bond in ATP is so easily broken and reformed, ATP is like a rechargeable battery that powers cellular process ranging from DNA replication to protein synthesis. Adenosine triphosphate (ATP) is comprised of the molecule adenosine bound to three phosphate groups.

How ATP is stored in a phosphate-phosphate bond?

A significant quantity of energy remains stored within the phosphate-phosphate bonds. Through metabolic processes, ATP becomes hydrolyzed into ADP, or further to AMP, and free inorganic phosphate groups.

ATP GOOD FOR LONG-TERM ENERGY STORAGE



All living cells rely on ATP's energy. It is vital to life. Adenosine triphosphate (ATP) is an energy-carrying molecule that fuels cellular functions. Prize-winner Fritz Lipmann established that ATP is the universal carrier of energy in all living cells and coined the term "energy-rich phosphate bonds." How Long It Takes to Build Muscle



Energy-storing molecules can be of two types: long-term and short-term. Usually, ATP is considered the most common molecule for energy storage, however. To understand the basis of these molecules, remember that chemical bonds always store energy. That is the crucial concept. Some bonds store more energy than others. When these chemical bonds are broken, ???

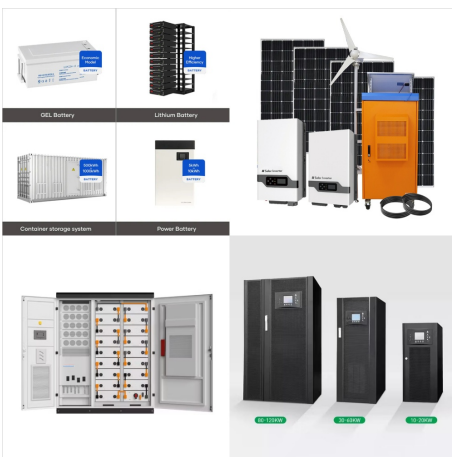


Why is ATP not a good long term energy storage? Because of the instability of phosphate bonds in ATP, it is not a good long term energy store. Fats and carbohydrates are better at this. Instead rapid phosphorylation occurs when energy is required. This means we need a relatively small amount of ATP.

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Question: Which of the following is uncharacteristic of ATP? It is a good long-term energy storage molecule. In most reactions involving ATP, only the outer, high-energy bond is hydrolyzed. When dephosphorylated, ATP becomes ADP. It is formed by attaching a phosphate group to ADP with a high-energy bond.



-Bonds of phosphate groups are not stable-ATP is not good for long-term energy storage-Energy in the bonds of ATP is transferred to chemical bonds of other molecules-Energy storage takes place in molecules such as sugars, starches, or fats. ADP and ATP Recycling.



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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Cells use fat and starch for long-term energy storage instead of ATP molecules because ATP (adenosine triphosphate) is a molecule that provides immediate energy to the cell. It is a short-term energy source that is constantly being utilized and regenerated in the cell to support essential cellular activities.



Find step-by-step Biology solutions and the answer to the textbook question Elizabeth is getting ready to run a marathon. She's hoping that the ATP in her body is good for long-term energy storage for the race. Why is her thinking incorrect? A. ATP doesn't release energy fast enough to support running B. Running requires only potential energy to work muscles C. ATP is an ???



Hence, ATP cannot be stored easily within cells, and the storage of carbon sources for ATP production (such as triglycerides or glycogen) is the best choice for energy maintenance. Surprisingly, in 1974, Dowdall [79] and co-workers found a considerable amount of ATP (together with acetylcholine) in cholinergic vesicles from the electric organ

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d. During the reaction, energy is also released. 3. Which of the following is UNCHARACTERISTIC of ATP? a. It is formed by attaching a phosphate group to ADP with a high-energy bond. b. In most reactions involving ATP, only the outer, high-energy bond is hydrolized. c. It is a good long-term energy storage molecule. d. When dephosphorylated, ATP



ATP is best suited for short-term energy storage because it is too unstable for long-term storage. Why Are fats good for energy storage? Fats are used as storage molecules because they give more ATP per molecule, they take less space to store and are less heavy than glucose. Fat molecules are the superstars when it comes to giving the body



She's hoping that the ATP in her body is good for long-term energy storage for the race. Why is her thinking incorrect? ATP takes too long to transfer oxygen from the lungs to the legs. ATP is an unstable molecule. 21 of 36. Term. When will a cell have a high degree of potency ? During cell specialization. After cell specialization. Prior

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1) why is atp not used for long term energy storage
Because ATP molecules are consumed immediately after production, they cannot be used to store energy. When ATP is required, storage molecules can be transformed to ATP. Adenosine triphospha
???View the full answer



Study with Quizlet and memorize flashcards containing terms like Which of the following is uncharacteristic of ATP?, In energy coupling the energy from an _____ reaction is used to power an _____ reaction., Which type of membrane transport process uses ATP as an energy source? and more. It is a good long-term energy storage molecule.



I think this answer mixes up the advantage of phosphates as energy carriers with the predominance of ATP. The case for phosphates is nicely made by Westheimer's 1987 paper; but there is little reason to suppose that ATP is chemically special compared to, say, GTP --- the prevalence of ATP over other triphosphates is likely just an ???

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Its regulation is consistent with the energy needs of the cell. High energy substrates (ATP, G6P, glucose) allosterically inhibit GP, while low energy substrates (AMP, others) allosterically activate it. Glycogen phosphorylase can be found in two different states, glycogen phosphorylase a (GP_a) and glycogen phosphorylase b (GP_b).

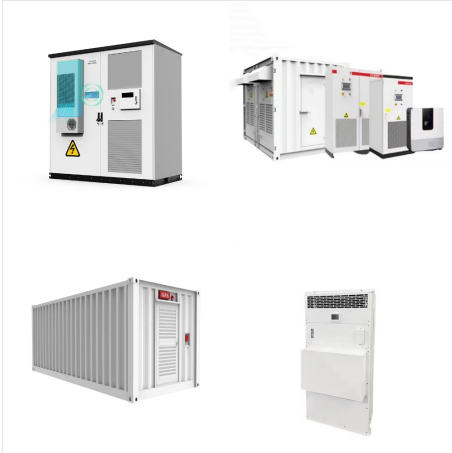


User: Elizabeth is getting ready to run a marathon. She's hoping that the ATP in her body is good for long-term energy storage for the race. Why is her thinking correct? Weegy: Elizabeth is getting ready to run a marathon. She's hoping that the ATP in her body is good for long-term energy storage for the race.



Study with Quizlet and memorize flashcards containing terms like All of the following are true statements about ATP EXCEPT that it is Answers: A. the molecule that all living cells rely on to do work. B. synthesized only within mitochondria. C. the cell's principal compound for energy transfers. D. a short-term energy-storage compound., At the end of aerobic cellular respiration, ???

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It can be easily broken down (hydrolyzed) in a one-step reaction, providing an immediate source of energy. ATP stores and releases small amounts of energy. ATP is a suitable source of energy in biological processes. Limitations of ATP. ATP is not a good long-term energy store due to the instability of its phosphate bonds.



She's hoping that the ATP in her body is good for long-term energy storage for the race. Why is her thinking incorrect? A. ATP doesn't release energy fast enough to support running B. ATP takes too long to transfer oxygen from the lungs to the legs C. ATP is an unstable molecule D. Running requires only potential energy to work muscles



ATP is produced continuously and is used Blank _____. Multiple choice question. as a storage molecule for intermediate time periods immediately for long term energy storage. immediately. The energy of motion is _____ energy. Multiple choice question. kinetic potential. kinetic.

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Unfortunately, ATP is best suited for short-term energy storage because it is too unstable for long-term storage. How do plants store long term energy? then use the energy of the ATP molecules to build sugar and starch molecules.



In most reactions involving ATP, only the outer, high-energy bond is hydrolyzed. c. It is a good long-term energy storage molecule. d. When dephosphorylated, ATP becomes ADP. It is a good long-term energy storage molecule. d. When dephosphorylated, ATP becomes ADP. There are 2 steps to solve this one. Solution. Step 1. View the full answer



Answer: ATP is an unstable molecule. Explanation: Recall that ATP and ADP are too unstable to serve as long-term energy storage units. In contrast, glucose has a stable molecular structure, so it stores energy more efficiently than ATP.

#pennfosternotes See page Biology (v2): Lesson 2: Page 65 in Biology_Lesson 2.pdf. Thanks so much!