

ACROSS

- 3 L-_____ is constantly produced in animals from pyruvate in a process of fermentation during normal metabolism and exercise.
- 8 The _____ of the mitochondrion is the compartment containing soluble enzymes that catalyze the oxidation of pyruvate and other small organic molecules.
- 9 Adenosine _____ is an ester of phosphoric acid with the nucleoside adenosine. AMP consists of the phosphate group, the pentose sugar ribose, and the nucleobase adenine.
- 10 The _____ mitochondrial membrane encloses the entire mitochondrion.
- 15 An ATP _____ is a general term for an enzyme that can synthesize adenosine triphosphate (ATP) from adenosine diphosphate (ADP) and inorganic phosphate by utilizing some form of energy.
- 16 _____ 1 is a kinase enzyme which acts upon Fructose 6-phosphate. It is the most important regulatory enzyme of glycolysis.
- 17 Glucose 6-_____ also known as Robison ester, is glucose sugar phosphorylated on carbon 6. The vast majority of glucose entering a cell will become phosphorylated in this way.
- 21 _____ are the internal compartments formed by the inner membrane of a mitochondrion.
- 23 _____ (PEP) has the highest energy phosphate bond found in living organisms. It is formed in glycolysis by the action of the enzyme enolase on 2-phosphoglycerate.
- 24 A _____ organism is any organism that does not require oxygen for growth.
- 25 _____-level phosphorylation is a type of chemical reaction that results in the formation of ATP by the direct transfer of a phosphate group to ADP from a reactive intermediate.
- 26 _____s are generally membrane-bound hemoproteins

that contain heme groups and carry out electron transport.

28 Adenylate _____ is a phosphotransferase enzyme that catalyzes the production of ATP from ADP.

30 _____, a monosaccharide, is an important carbohydrate in biology, used by the living cell as a source of energy and metabolic intermediates. It is one of the main products of photosynthesis and starts cellular respiration in both prokaryotes and eukaryotes.

33 An electron transport _____ associates electron carriers and mediating biochemical reactions that produce ATP.

34 Oxidative _____ is a metabolic pathway that uses energy released by the oxidation of nutrients to produce ATP.

35 _____ is the initial process of most carbohydrate catabolism serving

the functions of producing ATP and NADH, pyruvate for the citric acid cycle, and a variety of other compounds which are important for biosynthesis.

36 Ethanol _____ is the biological process by which sugars such as glucose, fructose, and sucrose, are converted into ethanol and carbon dioxide.

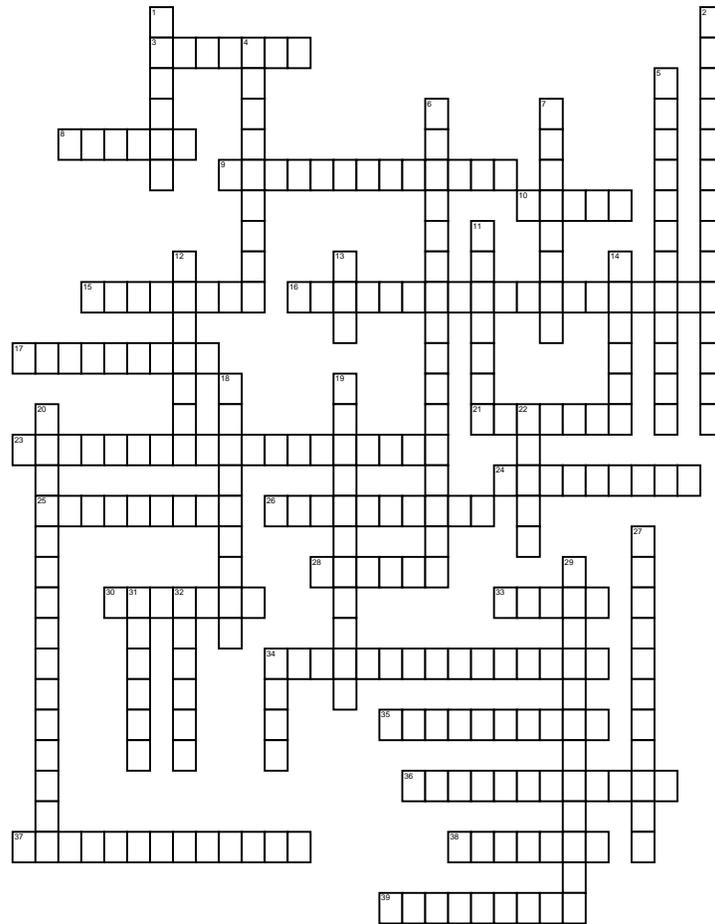
37 The _____ space is the region between the inner membrane and the outer membrane of a mitochondrion or a chloroplast.

38 _____ acid is an alpha-keto acid which plays an important role in biochemical processes. It is an output of glycolysis.

39 Fructose 6-_____ (also known as the Neuberger ester) is fructose sugar phosphorylated on carbon 6. The beta-D-form of this compound is very common in cells.

DOWN

1 The electron carrier,



- 18 Glucose _____ is an enzyme that catalyzes the conversion of glucose into fructose.
- 19 _____ is an enzyme that facilitates phosphorylation of glucose to glucose-6-phosphate.
- 20 _____ is the addition of a phosphate group to a protein molecule or a small molecule.
- 22 The _____ mitochondrial membrane forms internal compartments known as cristae, which allow greater space for the proteins such as cytochromes to function properly and efficiently.
- 27 _____s is the diffusion of ions across a selectively-permeable membrane, often specifically with reference to the generation of ATP by the movement of hydrogen ions across a membrane during cellular respiration.
- 29 _____ adenine dinucleotide is an important coenzyme found in cells, which plays key roles as a carrier of electrons and a participant in metabolic redox reactions, as well as in cell signaling.
- 31 _____ acid fermentation is a form of anaerobic respiration that occurs in some bacteria and animal cells in the absence of oxygen.
- 32 The _____ acid cycle, also known as the tricarboxylic acid cycle or Krebs cycle, is a series of enzyme-catalysed chemical reactions of central importance in all living cells that use oxygen as part of cellular respiration.
- 34 A proton _____ is an integral membrane protein that is capable of moving protons across the membrane of a cell, mitochondrion, or other subcellular compartment.
- 11 A _____ organism is an organism that has an oxygen based metabolism.
- 12 The malate-aspartate _____ is a biochemical system for translocating electrons produced during glycolysis across the impermeable inner membrane of the mitochondrion for oxidative phosphorylation in eukaryotes.
- 13 Acetyl-_____ is an important molecule in metabolism, used in many biochemical reactions. Its main use is to convey the carbon atoms within the acetyl group to the Krebs Cycle to be oxidized for energy production.
- 14 A _____, alternatively known as a phosphotransferase, is a type of enzyme that transfers phosphate groups from high-energy donor molecules, such as ATP, to specific target molecules.