Esterification Of Fatty Acids Results Direct

More than two million tons of citric acid are manufactured every year. It is used widely as acidifier, flavoring, preservative, and chelating agent.

Citric acid

acid dyes. It can enhance the mordanting process, crosslinking fabrics and dyes through an esterification reaction. Sodium citrate is a component of Benedict's

Citric acid is an organic compound with the formula C6H8O7. It is a colorless weak organic acid. It occurs naturally in citrus fruits. In biochemistry, it is an intermediate in the citric acid cycle, which occurs in the metabolism of all aerobic organisms.

Glyceroneogenesis

the glyceroneogenesis re-esterification, increasing the availability of free fatty acids within the cell. Excess free fatty acids in the cytosol will consequently

Glyceroneogenesis is a metabolic pathway which synthesizes glycerol 3-phosphate (used to form triglycerides) from precursors other than glucose. Usually, glycerol 3-phosphate is generated from glucose by glycolysis, in the liquid of the cell's cytoplasm (the cytosol). Glyceroneogenesis is used when the concentrations of glucose in the cytosol are low, and typically uses pyruvate as the precursor, but can also use alanine, glutamine, or any substances from the TCA cycle. The main regulator enzyme for this pathway is an enzyme called phosphoenolpyruvate carboxykinase (PEPC-K), which catalyzes the decarboxylation of oxaloacetate to phosphoenolpyruvate. Glyceroneogenesis is observed mainly in adipose tissue, and in the liver. A significant biochemical pathway regulates cytosolic lipid

levels....

First characterized in 1973 by DiMauro and DiMauro, the adult myopathic form of this disease is triggered by physically strenuous activities and/or extended periods without food and leads to immense muscle fatigue and pain. It is the most common inherited disorder of lipid metabolism affecting the skeletal muscle of adults, primarily affecting males. CPT II deficiency...

Carboxylic acid

groups. Carboxylic acids occur widely. Important examples include the amino acids and fatty acids. Deprotonation of a carboxylic acid gives a carboxylate

In organic chemistry, a carboxylic acid is an organic acid that contains a carboxyl group (?C(=O)?OH) attached to an R-group. The general formula of a carboxylic acid is often written as R?COOH or R?CO2H, sometimes as R?C(O)OH with R referring to an organyl group (e.g., alkyl, alkenyl, aryl), or hydrogen, or other groups. Carboxylic acids occur widely. Important examples include the amino acids and fatty acids. Deprotonation of a carboxylic acid gives a carboxylate anion.

Fischer–Speier esterification

esterification or Fischer–Speier esterification is a special type of esterification by refluxing a carboxylic acid and an alcohol in the presence of an

Fischer esterification or Fischer–Speier esterification is a special type of esterification by refluxing a carboxylic acid and an alcohol in the presence of an acid catalyst. The reaction was first described by Emil Fischer and Arthur Speier in 1895. Most carboxylic acids are suitable for the reaction, but the alcohol should generally be primary or secondary. Tertiary alcohols are prone to elimination. Contrary to common misconception found in organic chemistry textbooks, phenols can also be esterified to give good to near quantitative yield of products. Commonly used catalysts for a Fischer esterification include sulfuric acid, p-toluenesulfonic acid, and Lewis acids such as scandium(III) triflate. For more valuable or sensitive substrates (for example, biomaterials) other, milder procedures...

Lipogenesis

are synthesized by esterification of fatty acids to glycerol. Fatty acid esterification takes place in the endoplasmic reticulum of cells by metabolic

In biochemistry, lipogenesis is the conversion of fatty acids and glycerol into fats, or a metabolic process through which acetyl-CoA is converted to triglyceride for storage in fat. Lipogenesis encompasses both fatty acid and triglyceride synthesis, with the latter being the process by which fatty acids are esterified to glycerol before being packaged into very-low-density lipoprotein (VLDL). Fatty acids are produced in the cytoplasm of cells by repeatedly adding two-carbon units to acetyl-CoA. Triacylglycerol synthesis, on the other hand, occurs in the endoplasmic reticulum membrane of cells by bonding three fatty acid molecules to a glycerol molecule. Both processes take place mainly in liver and adipose tissue. Nevertheless, it also occurs to some extent in other tissues such as the gut...

Estradiol stearate

injection or subcutaneous injection. This is in contrast to short-chain fatty acid esters of estradiol, such as estradiol benzoate, which do not show a prolonged

Estradiol stearate (E2-17-St), also known as estradiol octadecanoate and sold under the brand name Depofollan, is a naturally occurring estrogen and an estrogen ester – specifically, the C17? stearate ester of estradiol. It occurs in the body as a very long-lasting metabolite and prohormone of estradiol. The compound is one of the components that collectively constitute lipoidal estradiol, another of which is estradiol palmitate. It is extremely lipophilic and hydrophobic. Estradiol stearate has no affinity for the estrogen receptor, requiring transformation into estradiol via esterases for its estrogenic activity. The compound does not bind to sex hormone-binding globulin or ?-fetoprotein, instead being transported by lipoproteins such as high-density lipoprotein and low-density lipoprotein...

Acetic acid

metabolism of carbohydrates and fats. Unlike longer-chain carboxylic acids (the fatty acids), acetic acid does not occur in natural triglycerides. Most of the

Acetic acid , systematically named ethanoic acid , is an acidic, colourless liquid and organic compound with the chemical formula CH3COOH (also written as CH3CO2H, C2H4O2, or HC2H3O2). Vinegar is at least 4% acetic acid by volume, making acetic acid the main component of vinegar apart from water. Historically, vinegar was produced from the third century BC and was likely the first acid to be produced in large quantities.

Lipolysis

free fatty acids. It is used to mobilize stored energy during fasting or exercise, and usually occurs in fat adipocytes. In the body, stores of fat are

Lipolysis is the metabolic pathway through which lipid triglycerides are hydrolyzed into a glycerol and free fatty acids. It is used to mobilize stored energy during fasting or exercise, and usually occurs in fat adipocytes.

A citrate is a derivative of citric acid; that is, the salts, esters, and the polyatomic anion found in solutions and salts of citric acid. An example of the former, a salt is trisodium citrate; an ester is triethyl citrate. When citrate trianion is part of a salt, the formula of the citrate trianion is written as C6H5O3?7 or C3H5O(COO)3?3.

Carnitine palmitoyltransferase II deficiency

long-chain fatty acids from being transported into the mitochondria for utilization as an energy source. The disorder presents in one of three clinical

Carnitine palmitoyltransferase II deficiency, sometimes shortened to CPT-II or CPT2, is an autosomal recessively inherited genetic metabolic disorder characterized by an enzymatic defect that prevents long-chain fatty acids from being transported into the mitochondria for utilization as an energy source. The disorder presents in one of three clinical forms: lethal neonatal, severe infantile hepatocardiomuscular and myopathic.

Acetic acid is the second simplest carboxylic acid (after formic acid). It is an important chemical reagent and industrial chemical across various fields, used primarily in the production of cellulose acetate for photographic film, polyvinyl acetate for wood glue, and synthetic fibres and fabrics. In households, diluted acetic acid is often used in descaling agents. In the...

Glycerides are fatty acid esters of glycerol; they are important in biology, being one of the main classes of lipids and comprising the bulk of animal fats and vegetable oils. Lactones are cyclic carboxylic esters; naturally occurring lactones are mainly 5- and 6-membered ring lactones...

Ester

derivatives of acidic hydrogen of other acids are esters as well (e.g. amides), but not according to the IUPAC. Glycerides are fatty acid esters of glycerol;

In chemistry, an ester is a compound derived from an acid (either organic or inorganic) in which the hydrogen atom (H) of at least one acidic hydroxyl group (?OH) of that acid is replaced by an organyl group (R?). These compounds contain a distinctive functional group. Analogues derived from oxygen replaced by other chalcogens belong to the ester category as well. According to some authors, organyl derivatives of acidic hydrogen of other acids are esters as well (e.g. amides), but not according to the IUPAC.

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