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ProductInformation

Sodium pyruvate
SigmaUltra

Product Number **P 8574**
Storage Temperature 2-8 °C

Product Description

Molecular Formula: $C_3H_3NaO_3$
Molecular Weight: 110.0
CAS Number: 113-24-6
Synonyms: α-ketopropionic acid sodium salt, 2-oxopropanoic acid sodium salt, pyruvic acid sodium salt

Trace elemental analyses have been performed on the SigmaUltra sodium pyruvate. The Certificate of Analysis provides lot-specific results. SigmaUltra sodium pyruvate is for applications which require tight control of elemental content.

Pyruvate, the anion of pyruvic acid, is the end product of the glycolysis pathway, whereby glucose is converted to pyruvate with the production of ATP. In the mitochondria of aerobic organisms, pyruvate is converted to acetyl coenzyme A, which in turn is oxidized completely to CO_2. When oxygen is not present in sufficient quantities, pyruvate is metabolized to lactate. In anaerobic organisms such as yeast, pyruvate is converted to ethanol. In gluconeogenesis, pyruvate is converted to glucose.[1] Other metabolic fates of pyruvate include its conversion to alanine by transamination and to oxaloacetate by carboxylation.[2]

Sodium pyruvate is utilized as a component in culture broth and media.[3,4] The use of sodium pyruvate in Wallen fermentation medium to enhance the conversion of oleic acid to 10-ketostearic acid by *Bacillus sphaericus* has been described.[5] A protocol that uses sodium pyruvate to establish stably transfected human B cell lines has been published.[6]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (100 mg/ml), yielding a clear, colorless solution.

Storage/Stability

Sterile filtered commercial solutions of sodium pyruvate are stable up to 24 months (100 mM, Product Number S 8636), when stored at 2-8 °C.

Pyruvic acid polymerizes and decomposes upon standing. It is advised to keep containers tightly sealed.[7]

References

1. Biochemistry, 3rd ed., Stryer, L., W. H. Freeman (New York, NY: 1988), pp. 349-394.
2. Textbook of Biochemistry with Clinical Correlations, Devlin, T. M., ed., Wiley-Liss (New York, NY: 1992), p. 248.
3. Geshi, M., et al., Effects of sodium pyruvate in nonserum maturation medium on maturation, fertilization, and subsequent development of bovine oocytes with or without cumulus cells. Biol. Reprod., **63(6)**, 1730-1734 (2000).
4. Jiang, X., and Doyle, M. P., Growth supplements for *Helicobacter pylori*. J. Clin. Microbiol., **38(5)**, 1984-1987 (2000).
5. Kuo, T. M., et al., Conversion of fatty acids by *Bacillus sphaericus*-like organisms. Curr. Microbiol., **45(4)**, 265-271 (2002).
6. Brielmeier, M., et al., Improving stable transfection efficiency: antioxidants dramatically improve the outgrowth of clones under dominant marker selection. Nucleic Acids Res., **26(9)**, 2082-2085 (1998).
7. The Merck Index, 12th ed., Entry# 8205.

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