



3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

Product Information

Sodium pyruvate

Product Number **P 3662**

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-oxopropionic acid sodium salt, pyruvic acid sodium
salt

This product is hybridoma tested (0.11 mg/ml) and is
suitable for hybridoma research.

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} It may be used in cell culture at a
concentration of 1 mM (0.11 mg/ml). 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.

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.

Hybri-Max is a registered trademark of the Sigma-
Aldrich Corporation.

GCY/RXR 7/03

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.