

Sodium Pyruvate

Sodium pyruvate is added to many media formulations as a carbohydrate source that cells can easily access for energy production. It is also involved in amino acid metabolism and aerobic respiration.

Pyruvate is an anion of pyruvic acid and the end product of glycolysis. The glycolic pathway, which occurs in the mitochondria of aerobic organisms, converts glucose to pyruvate, which is then undergoes oxidative decarboxylation to form acetyl CoA, the metabolite that initiates the Krebs' Cycle.¹ Some microorganisms convert pyruvate to ethanol through the energy-producing process of alcoholic fermentation when under anaerobic conditions.²

When cells are under conditions of oxidative stress, pyruvic acid is reversibly reduced to NADH, resulting in the formation of lactic acid. Pyruvate also takes on antioxidant duties in low oxygen environments.

Prior to its conversion to acetyl CoA, pyruvate may also be used to produce alanine by transamination. In the synthesis of alanine, pyruvate is the amino-group acceptor.³

Mediatech's Sodium Pyruvate solution is offered as a 100 mM sterile solution in cell culture grade distilled, deionized water. A dilution of 1:100 to yield a 1 mM (110 mg/mL) working concentration is suitable for most cells.

References

¹Moran, L.A., & Scrimgeour, K.G. *Biochemistry*. 2nd Ed. New Jersey: Prentice Hall, 1994. pp. 15.1-21.15.

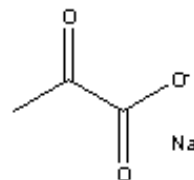
²Keeton, W.T. *Biological Science*. 5th Ed. New York: Norton & Company, 1993. p. 168-181.

³Moran, L.A., & Scrimgeour, K.G. *Biochemistry*. 2nd Ed. New Jersey: Prentice Hall, 1994. pp. 15.1-21.15.

Molecular Weight & Formula:

110.0, C₃H₃NaO₃

Molecular Structure:



Appearance:

Clear, colorless solution

Working Concentration:

1 mM (110 mg/L)

Storage & Stability:

This product has a shelf life of 18 months when stored refrigerated (2-8C); protected from light.

Shipping:

Ambient (15-30C)

Product Specifications:

pH	5.0-7.0
Osmolality	300-500 mOsm/kg H ₂ O
Endotoxin	≤ 0.25 EU/mL
Mycoplasma	Tested Negative
Sterility by USP	Pass

Sodium Pyruvate

100 mM Solution

25-000-CI

6 x 100 mL
