

Product Information Sheet

Acetyl Coenzyme A Trisodium Salt

A2056

Product Description

Molecular Formula: $C_{23}H_{35}N_7O_{17}P_3SNa_3$

Molecular Weight: 875.51

Storage Temperature: $-20\text{ }^{\circ}\text{C}$ E^M : 16,400 (water, 260 nm)¹ E^M : 15,400 (0.1 M PO_4 Buffer, pH 7, 259 nm) E^M : 8,700 (water, 232 nm)¹

Coenzymes comprise a class of molecules, generally derived from vitamins, which function catalytically in enzyme systems.² The acetic acid moiety, which is bound by a high-energy bond (free energy 34.3 kJ/mole) to the -SH group of coenzyme A, is a precursor to fatty acids, steroids, and other naturally occurring compounds, such as terpenes and acetogenins present in plants.^{3,4} The biosynthetic pathways for Acetyl CoA have been illustrated.³ In the transfer reaction by Acetyl CoA of the C_2 acetyl fragment, either the carboxyl group or the methyl group may react (electrophilic vs. nucleophilic reaction, respectively).⁴

This product is prepared enzymatically by reacting coenzyme A (CoA) with acetyl phosphate and phosphotransacetylase. It is purified by ion exchange chromatography. Several methods of preparation and methods for the determination of Acetyl CoA and other CoA derivatives have been published.⁵⁻⁷

Several dissertations have cited use of this product in their research.⁸⁻¹⁸

Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store the product desiccated at $-20\text{ }^{\circ}\text{C}$.

Preparation Instructions

This product is tested for solubility in water at 100 mg/mL.

Aqueous CoA solutions stored in aliquots at $-20\text{ }^{\circ}\text{C}$ are expected to be stable for no longer than 2 weeks. Acetyl CoA is generally stable in neutral and moderately acidic solutions, even at elevated temperatures for a short time; aqueous solutions at pH 3.5–5 can be heated to $100\text{ }^{\circ}\text{C}$ without decomposition.¹ Acetyl CoA hydrolyzes in strong acid and hydrolyzes more rapidly in alkaline solutions.¹⁹

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