Product Information Sheet

Acetyl Coenzyme A Trisodium Salt

A2056

Product Description

Molecular Formula: $C_{23}H_{35}N_7O_{17}P_3SNa_3$ (for free acid)

Molecular Weight: 875.51 (for free acid)

E^M: 16,400 (water, 260 nm)[1]

E^M: 15,400 (0.1 M PO4 Buffer, pH 7, 259 nm)

E^M: 8,700 (water, 232 nm)[1]

This product, A2056, 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.[2–4]

Coenzymes comprise a class of molecules, generally derived from vitamins, which function catalytically in enzyme systems.[5] 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.[6,7] The biosynthetic pathways for Acetyl CoA have been illustrated.[6]

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).[7]

Precautions and Disclaimer

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.

Preparation Instructions

Acetyl CoA, A2056, is soluble in water at 50 mg/mL. Aqueous solutions stored in aliquots at –20 °C are 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 °C without decomposition.[1] Acetyl CoA hydrolyzes in strong acid and hydrolyzes more rapidly in alkaline solutions.

Storage/Stability

Store the product desiccated at –20 °C.

References

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