

Product Data Sheet

Product Name: Propionylcarnitine

Cat. No.: GC36979

Chemical Properties

Cas. No. 17298-37-2

SMILES CCC(OC(CC([O-])=O)C[N+](C)(C)C)=O

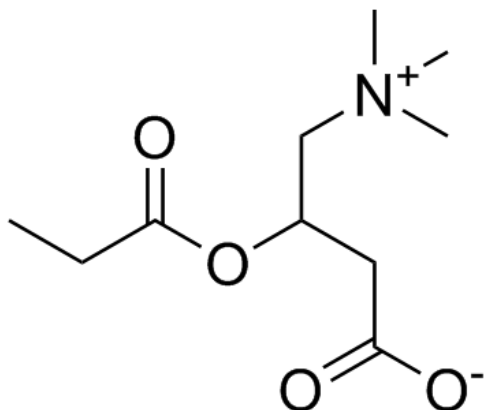
Formula $C_{10}H_{19}NO_4$ M.Wt 217.26

Solubility DMSO: 125 mg/mL (575.35 mM) Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Propionylcarnitine is an ester metabolite generated by L-carnitine and propionyl-CoA under the catalysis of carnitine acyltransferase^[1]. Elevated levels of Propionylcarnitine in serum are an indirect biomarker of vitamin B12 deficiency, because B12 deficiency inhibits the conversion of propionyl-CoA to succinyl-CoA, leading to accumulation of Propionylcarnitine^[2]. Propionylcarnitine can act as a superoxide scavenger, antioxidant, and DNA cleavage protector^[3]. Propionylcarnitine can alleviate oxidative stress damage to red blood cells in β -thalassemia^[4].

Caution: Product has not been fully validated for medical applications. For research use only.

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References:

- [1] Roseiro L C, Santos C. Carnitines (including l-carnitine, acetyl-carnitine, and propionyl-carnitine) [M]//Nonvitamin and nonmineral nutritional supplements. Academic Press, 2019: 45-52.
- [2] Hannibal L, Lysne V, Bjørke-Monsen A L, et al. Biomarkers and algorithms for the diagnosis of vitamin B12 deficiency[J]. Frontiers in molecular biosciences, 2016, 3: 27.
- [3] Vanella A, Russo A, Acquaviva R, et al. L-propionyl-carnitine as superoxide scavenger, antioxidant, and DNA cleavage protector[J]. Cell biology and toxicology, 2000, 16: 99-104.
- [4] Malaguarnera M, Vacante M, Giordano M, et al. L-carnitine supplementation improves hematological pattern in patients affected by HCV treated with Peg interferon- α 2b plus ribavirin[J]. World journal of gastroenterology: WJG, 2011, 17(39): 4414.

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