Product Datasheet

Propionylcarnitine

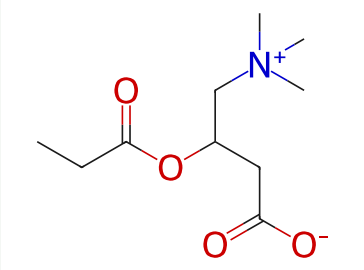
Catalog No. **BP-06887** · CAS **17298-37-2** · Form **free base** · Physical state **solid** · Color **White to off-white** · Version **1.0** · Revision **2026-11-16**

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Target	Research area
Endogenous Metabolite	**Metabolic Disease**

Molecular formula	$C_{10}H_{19}NO_4$
Molecular weight	**217.2622**

STRUCTURE



DESCRIPTION

Propionylcarnitine is metabolized by carnitine acetyltransferase from propionyl-CoA. Increased propionylcarnitine is regarded as a biomarker of vitamin B12 deficiency.

BIOLOGICAL ACTIVITY

In Vitro

Propionylcarnitine shows protection to beta-thalassaemic erythrocytes from oxidative stress[3].

Propionylcarnitine increases production of 14CO2 from [1-14C]pyruvate and increases the rate of formation of acetyl camitine from pyruvate[4].

Propionylcarnitine allows the endothelial cells to maintain their functionality and regulatory role on vessel activity for a longer time and decreases the formation of oxygen reactive species due to xanthine oxidase activity on hypoxanthine formed by adenine nucleotide catabolism[6].

In Vivo

Propionylcarnitine (2 mM/kg; p.o. for 4 weeks) affects plasma and urine total carnitine concentrations of mice[3].

REFERENCES

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[5]. Morand R, et al. Effect of carnitine, acetyl-, and propionylcarnitine supplementation on the body carnitine pool, skeletal muscle composition, and physical performance in mice. Eur J Nutr. 2014 Sep;53(6):1313-25.

[6]. Bertelli A, et al. Effect of propionyl carnitine on energy charge and adenine nucleotide content of cardiac endothelial cells during hypoxia. Int J Tissue React. 1991;13(1):37-40.

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