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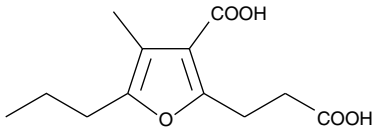
Product Information

CMPF

Item No. 10007133

CAS Registry No.: 86879-39-2
Formal Name: 3-carboxy-4-methyl-5-propyl-2-furanpropanoic acid
MF: $C_{12}H_{16}O_5$
FW: 240.3
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 260 nm



Laboratory Procedures

For long term storage, we suggest that CMPF be stored as supplied at -20°C. It should be stable for at least two years.

CMPF is supplied as a crystalline solid. A stock solution may be made by dissolving the CMPF in an organic solvent purged with an inert gas. CMPF is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of CMPF in these solvents is approximately 30 mg/ml.

CMPF is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, CMPF should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. CMPF has a solubility of approximately 0.5 mg/ml in a1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Furan fatty acids are unique, naturally occurring lipids that are found in significant amounts in dietary phospholipids, such as in salmon roe.[1] CMPF is an endogenous metabolite of furan fatty acids in humans. CMPF is highly albumin-bound and accumulates in the serum of uremic patients to concentrations in excess of 0.2 mM. Its primary effect is to inhibit cellular transport and subsequent deiodination of thyroxine (T_4).[2,3] CMPF is tightly bound to albumin but only moderately inhibits T_4 binding in a direct manner (10-14% at 0.3 mM). However, CMPF effectively displaces competitive T_4 binding molecules from albumin, such as acidic drugs and free fatty acids.[3] Therefore, CMPF may indirectly influence T_4 binding to albumin by increasing the serum concentration of competitive binding molecules, particularly free fatty acids such as oleic acid.[3]

References

1. Ishii, K., Okajima, H., Okada, Y., *et al.* Studies on furan fatty acids of salmon roe phospholipids. *J. Biochem.* **103(5)**, 836-839 (1988).
2. Lim, C.-F., Bernard, B.F., De Jong, M., *et al.* A furan fatty acid and indoxyl sulfate are the putative inhibitors of thyroxine hepatocyte transport in uremia. *J. Clin. Endocrinol. Metab.* **76(2)**, 318-324 (1993).
3. Lim, C.-F., Stockigt, J.R., Curtis, A.J., *et al.* A naturally occuring furan fatty acid enhances drug inhibition of thyroxine binding in serum. *Metabolism* **42(11)**, 1468-1474 (1993).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/10007133

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