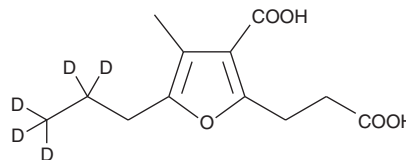


PRODUCT INFORMATION



CMPF-d₅ Item No. 9001871

Formal Name:	2-(2-carboxyethyl)-4-methyl-5-(propyl-2,2',3,3,3-d ₅)furan-3-carboxylic acid
Synonym	FA 12:4;O3-d ₅
MF:	C ₁₂ H ₁₁ D ₅ O ₅
FW:	245.3
Chemical Purity:	≥98% (CMPF)
Deuterium Incorporation:	≥99% deuterated forms (d ₁ -d ₅); ≤1% d ₀
UV/Vis.:	λ _{max} : 204, 260 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

CMPF-d₅ is intended for use as an internal standard for the quantification of CMPF (Item No. 10007133) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

CMPF-d₅ is supplied as a crystalline solid. A stock solution may be made by dissolving the CMPF-d₅ in the solvent of choice, which should be purged with an inert gas. CMPF-d₅ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of CMPF-d₅ in these solvents is approximately 30 mg/ml.

Description

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 (T₄).^{1,2} CMPF is tightly bound to albumin but only moderately inhibits T₄ binding in a direct manner (10-14% at 0.3 mM). However, CMPF effectively displaces competitive T₄ binding molecules from albumin, such as acidic drugs and free fatty acids.³ Therefore, CMPF may indirectly influence T₄ 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 occurring furan fatty acid enhances drug inhibition of thyroxine binding in serum. *Metabolism* **42**(11), 1468-1474 (1993).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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