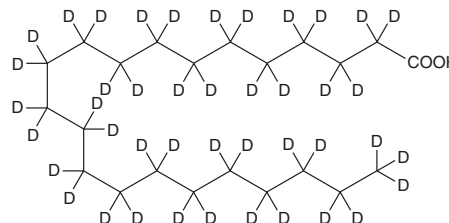


PRODUCT INFORMATION



Docosanoic Acid-d₄₃ Item No. 29075

CAS Registry No.: 29823-26-5
Synonyms: Behenic Acid-d₄₃, C22:0-d₄₃, DCA-d₄₃
MF: C₂₂H₄₃O₂
FW: 383.9
Chemical Purity: ≥95% (Docosanoic Acid)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄₃); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Docosanoic acid-d₄₃ is intended for use as an internal standard for the quantification of docosanoic acid (Item No. 9000338) 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).

Docosanoic acid-d₄₃ is supplied as a solid. A stock solution may be made by dissolving the docosanoic acid-d₄₃ in the solvent of choice, which should be purged with an inert gas. Docosanoic acid-d₄₃ is soluble in the organic solvent dimethyl formamide at a concentration of approximately 3 mg/ml.

Description

Docosanoic acid is a long-chain saturated fatty acid. It has been found in peanut and *M. oleifera* seed oils.^{1,2} It inhibits the double-stranded DNA binding activity of p53 through a direct interaction with the DNA binding domain (K_d = 12 nM).³ Docosanoic acid inhibits rat DNA polymerase β and human DNA polymerase λ activity in cell-free enzyme assays when used at a concentration of 100 μM and inhibits human DNA topoisomerase I and II relaxation activity at a concentration of 25 μM.⁴ Liver levels of docosanoic acid are reduced in rats fed a high-fat or a high-fat and high-cholesterol diet but not a high-cholesterol only diet.⁵ Formulations containing docosanoic acid have been used in hair conditioner and moisturizers.

References

1. Dean, L.L. and Sanders, T.H. Hexacosanoic acid and other very long-chain fatty acids in peanut seed oil. *Plant Genet. Resour.* **7(3)**, 252-256 (2009).
2. Sánchez-Machado, D.I., López-Cervantes, J., Núñez-Gastélum, J.A., et al. Effect of the refining process on *Moringa oleifera* seed oil quality. *Food Chem.* **187**, 53-57 (2015).
3. Iijima, H., Kasai, N., Chiku, H., et al. The inhibitory action of long-chain fatty acids on the DNA binding activity of p53. *Lipids* **41(6)**, 521-527 (2006).
4. Yonezawa, Y., Hada, T., Uryu, K., et al. Inhibitory action of C22-fatty acids on DNA polymerases and DNA topoisomerases. *Int. J. Mol. Med.* **18(4)**, 583-588 (2006).
5. Serviddio, G., Bellanti, F., Villani, R., et al. Effects of dietary fatty acids and cholesterol excess on liver injury: A lipidomic approach. *Redox Biol.* **9**, 296-305 (2016).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/09/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM