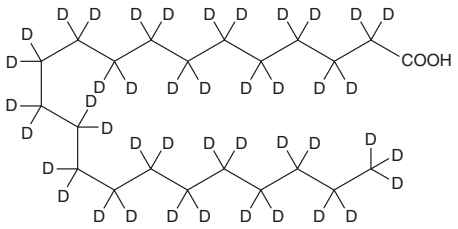
PRODUCT INFORMATION

Docosanoic Acid-d_{43}

Item No. 29075

CAS Registry No.:	29823-26-5
Synonyms:	Behenic Acid-d_{43}, C22:0-d_{43}, DCA-d_{43}
MF:	$C_{22}HD_{43}O_2$
FW:	383.9
Chemical Purity:	≥95% (Docosanoic Acid)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_{43}); ≤1% d_0
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-d_{43} 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-d_{43} is supplied as a solid. A stock solution may be made by dissolving the docosanoic acid-d_{43} in the solvent of choice, which should be purged with an inert gas. Docosanoic acid-d_{43} 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).

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