

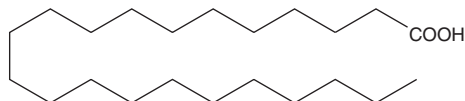
# PRODUCT INFORMATION



## Docosanoic Acid

Item No. 9000338

**CAS Registry No.:** 112-85-6  
**Synonyms:** Behenic Acid, C22:0, DCA, FA 22:0, NSC 32364  
**MF:** C<sub>22</sub>H<sub>44</sub>O<sub>2</sub>  
**FW:** 340.6  
**Purity:** ≥95%  
**Supplied as:** A crystalline 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 is supplied as a crystalline solid. A stock solution may be made by dissolving the docosanoic acid in the solvent of choice, which should be purged with an inert gas. Docosanoic acid is soluble in the organic solvent dimethyl formamide (DMF) at a concentration of approximately 3 mg/ml.

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

### Description

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

### Reference

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.

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