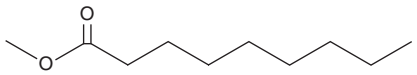
PRODUCT INFORMATION

Nonanoic Acid methyl ester

Item No. 26719

CAS Registry No.: 1731-84-6
Synonyms: C9:0 methyl ester, Methyl Nonanoate, Methyl Pelargonate, Pelargonic Acid methyl ester, SFE 10:0
MF: $C_{10}H_{20}O_2$
FW: 172.3
Purity: ≥98%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Nonanoic acid methyl ester is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of nonanoic acid methyl ester in these solvents is approximately 50 and 10 mg/ml, respectively.

Nonanoic acid methyl ester is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the nonanoic acid methyl ester solution of ethanol should be diluted with the aqueous buffer of choice. The solubility of nonanoic acid methyl ester in PBS (pH 7.2) is approximately 0.1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Nonanoic acid methyl ester is an esterified form of nonanoic acid. It is found as a volatile component following thermal oxidation of conjugated linoleic acid methyl ester but not linoleic acid methyl ester.[1] It is cytotoxic to A549 lung carcinoma cells with an LC_{50} value of 104.09 µg/ml.[2] Nonanoic acid methyl ester enhances the penetration of minoxidil into isolated hamster ventral ear skin when applied at a 10% concentration *ex vivo*.[3] It is a substrate for the *E. coli* alkane hydroxylase system (AlkBGT), which oxidizes nonanoic acid methyl ester to produce 9-hydroxy methyl nonanoate, an ω-hydroxy fatty acid ester that can be used in the production of sustainable polymers.[4]

References

1. Cossignani, L., Giua, L., Simonetti, M.S., *et al*. Volatile compounds as indicators of conjugated and unconjugated linoleic acid thermal oxidation. *Eur. J. Lipid Sci. Technol.* **116(4),** 407-412 (2014).
2. Bordoloi, M., Saikia, S., Kolita, B., *et al*. Volatile inhibitors of phosphatidylinositol-3-kinase (PI3K) pathway: Anticancer potential of aroma compounds of plant essential oils. *Anticancer Agents Med. Chem*. **18(1),** 87-109 (2018).
3. Chukwumerije, O., Nash, R.A., Matias, J.R., *et al*. Studies on the efficacy of methyl esters of n-alkyl fatty acids as penetration enhancers. *J. Invest. Dermatol.* **93(3),** 349-352 (1989).
4. van Nuland, Y.M., Eggink, G., and Weusthuis, R.A. Application of AlkBGT and AlkL from *Pseudomonas putida* GPo1 for selective alkyl ester ω-oxyfunctionalization in *Escherichia coli*. *Appl. Environ. Microbiol.* **82(13),** 3801-3807 (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