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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

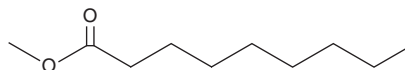
PRODUCT INFORMATION



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
MF: C₁₀H₂₀O₂
FW: 172.3
Purity: ≥98%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥1 year



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 purged with an inert gas can be used. The solubility of nonanoic acid methyl ester in these solvents is approximately 10 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of nonanoic acid methyl ester is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. 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 LC₅₀ 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).

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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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