PRODUCT INFORMATION



Jacaric Acid

Item No. 16036

| CAS Registry No.: Formal Name: | 28872-28-8 8Z,10E,12Z-octadecatrienoic acid | |
|-----------------------------------|---|---|
| Synonyms. | 8(7) 10(F) 12(7)-Octadecatrienoic Acid | СООН |
| MF: | $C_{18}H_{30}O_2$ | |
| FW: | 278.4 | \sim |
| Purity: | ≥95% | |
| UV/Vis.: | λ _{max} : 273, 284 nm | |
| Supplied as: | A solution in ethanol | \checkmark |
| Storage: | -20°C | |
| Stability: | ≥2 years | |
| Information represents | the product specifications. Batch specific analytic | cal results are provided on each certificate of analysis. |

Laboratory Procedures

Jacaric acid 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 jacaric acid in these solvents is approximately 30 mg/ml.

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

Description

Jacaric acid is a conjugated polyunsaturated fatty acid first isolated from seeds of Jacaranda plants.¹ Structurally, it is an 18-carbon ω -6 triene isomer of γ -linolenic acid (Item No. 90220). Jacaric acid induces cell cycle arrest and apoptosis in a variety of cancer cell lines (GI₅₀ = $1-5 \mu$ M).²⁻⁴ It increases the production of reactive oxygen species, and cytotoxicity is abolished by the antioxidant α -tocopherol, suggesting that apoptosis results from oxidative stress.^{3,4} Jacaric acid is metabolized in vivo to conjugated linoleic acid (Item No. 90140), which is also cytotoxic to cancer cells.⁵ Jacaric acid inhibits cyclooxygenase-1 in vitro (K₂ = 1.7 μ M) and, with long term feeding, decreases stearoyl-CoA desaturase expression and activity in mice.6,7

References

- 1. Miranda, J., Fernindez-Quintela, A., Macarulla, M.T., et al. J. Physiol. Biochem. 65(1), 25-32 (2009).
- 2. Gasmi, J. and Sanderson, J.T. Phytomedicine 20(8-9), 734-742 (2013).
- 3. Yamasaki, M., Motonaga, C., Yokoyama, M., et al. J. Oleo Sci. 62(11), 925-932 (2013).
- 4. Liu, W.N. and Leung, K.N. Cancer Cell Int. 15 (2015).
- 5. Shultz, T.D., Chew, B.P., Seaman, W.R., et al. Cancer Lett. 63(2), 125-133 (1992).
- 6. Mashhadi, Z., Boeglin, W.E., and Brash, A.R. Biochim. Biophys. Acta 1851(10), 1346-1352 (2015).
- 7. Shinohara, N., Ito, J., Tsuduki, T., et al. J. Oleo Sci. 61(8), 433-441 (2012).

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFFTY 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.

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, 02/07/2024

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