

Product Data Sheet

Product Name: Isopimaric Acid

Cat. No.: GC49306

Chemical Properties

Cas. No. 5835-26-7

SMILES C[C@@]12[C@](CC=C3[C@]2([H])CC[C@@](C)(C3)C=C)([H])[C@@](C)(CCC1)C(O)=O

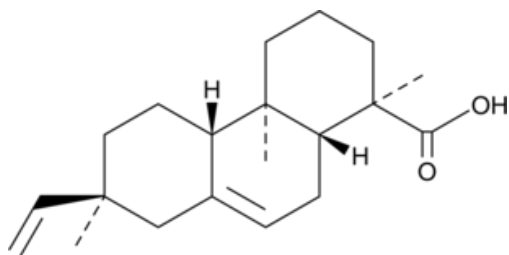
Formula $C_{20}H_{30}O_2$ M.Wt 302.5

Solubility DMSO : ≥ 25 mg/mL (82.66 mM) Storage $-20^{\circ}C$

General For obtaining a higher solubility, please warm the tube at $37^{\circ}C$ and shake it in the tips ultrasonic bath for a while. Stock solution can be stored below $-20^{\circ}C$ for several months.

Shipping Evaluation sample solution : ship with blue ice All other available size: ship with RT, or Condition blue ice upon request.

Structure



Background

Isopimaric acid is a diterpenoid resin acid that has been found in *P. nigra* and has diverse biological activities.^{1,2,3,4} It is active against clinical isolates of epidemic methicillin-resistant *S. aureus* (EMRSA; MICs = 32-64 μ g/ml).¹ Isopimaric acid is an agonist of retinoid X receptor alpha (RXR α), RXR β , and RXR γ in a reporter assay using HEK293T cells expressing human receptors (EC₅₀s = 26, 32, and 33 μ M, respectively).² It opens large conductance calcium-activated potassium channels (BKCa1.1/KCa1.1) in HEK293 cells expressing recombinant channels and the activating β 1 regulatory subunit when used at a concentration of 10 μ M.³ Isopimaric acid potentiates reductions in field excitatory postsynaptic potential (fEPSP) slopes in hippocampal slices and decreases escape latency in the Morris water maze in a 3xTg mouse model of Alzheimer's disease.⁴ It has been found

Caution: Product has not been fully validated for medical applications. For research use only.

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as an environmental contaminant in pulp and paper mill effluent.⁵

- 1.Smith, E., Williamson, E., Zloh, M., et al.Isopimaric acid from Pinus nigra shows activity against multidrug-resistant and EMRSA strains of Staphylococcus aureusPhytother. Res.19(6)538-542(2005)
- 2.Merk, D., Grisoni, F., Friedrich, L., et al.Computer-assisted discovery of retinoid X receptor modulating natural products and isofunctional mimeticsJ. Med. Chem.61(12)5442-5447(2018)
- 3.Imaizumi, Y., Sakamoto, K., Yamada, A., et al.Molecular basis of pimarane compounds as novel activators of large-conductance Ca²⁺-activated K⁺ channel α -subunitMol. Pharmacol.62(4)836-846(2002)
- 4.Wang, L., Kang, H., Li, Y., et al.Cognitive recovery by chronic activation of the large-conductance calcium-activated potassium channel in a mouse model of Alzheimer's diseaseNeuropharmacology928-15(2015)
- 5.van den Heuvel, M.R., Ellis, R.J., Tremblay, L.A., et al.Exposure of reproductively maturing rainbow trout to a New Zealand pulp and paper mill effluentEcotoxicol. Environ. Saf.51(1)65-75(2002)

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