Rocaglamide

CAS Registry No.: 84573-16-0

Formal Name: (1R,2R,3S,3aR,8bS)-2,3,3a,8b-tetrahydro-1,8b-dihydroxy-6,8-dimethoxy-3a-(4-methoxyphenyl)-N,N-dimethyl-3-phenyl-1H-cyclopenta[b]benzofuran-2-carboxamide

Synonyms: NSC 326408, Roc-A, Rocaglamide A

MF: C_{29}H_{31}NO_7
FW: 505.6
Purity: ≥ 95%

Supplied as: A crystalline solid

Storage: -20°C

Stability: As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly

Labornatory Procedures

Rocaglamide is supplied as a crystalline solid. A stock solution may be made by dissolving the rocaglamide in the solvent of choice. Rocaglamide is soluble in organic solvents such as ethanol and DMSO, which should be purged with an inert gas. The solubility of rocaglamide in these solvents is approximately 5 and 10 mg/ml, respectively.

Rocaglamide is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Rocaglamide is an anti-inflammatory, insecticidal, and anticancer tetrahydrobenzofuran isolated from Aglaia species. It has been shown to inhibit both TNF-α and the activation of NF-κB in Jurkat T cells with IC_{50} values in the nanomolar range. At 25 nM, rocaglamide induces apoptosis in various human leukemia cell lines, activating p38 MAPK/JNK and suppressing ERK. Rocaglamide also reduces IFN-γ, TNF-α, IL-2, and IL-4 production in peripheral blood T cells at a concentration of 50 nM. Furthermore, rocaglamide can inhibit the T cell expression of the immune response transcription factor, nuclear factor of activated T cells.

References