PRODUCT INFORMATION

DCP-LA

Item No. 21375

CAS Registry No.: 28399-31-7
Formal Name: 2-[(2-pentylcyclopropyl)methyl]-cyclopropaneoctanoic acid
Synonyms: FA 20:2, FR 236924
MF: $C_{20}H_{36}O_2$
FW: 308.5
Purity: ≥95%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥4 years

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

Laboratory Procedures

DCP-LA 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 DCP-LA in these solvents is approximately 25 and 50 mg/ml, respectively.

Description

DCP-LA is a derivative of linoleic acid (Item No. 90150) and a potent activator of PKCε.[1] It activates PKCε with a greater than 7-fold stronger potency over PKCα, βI, βII, γ, δ, μ, η, and ζ in a cell-free assay. DCP-LA activates PKC in PC12 cells in a concentration-dependent manner, an effect that is blocked by the PCK inhibitor bisindolylmaleimide I (Item Nos. 13298 | 21180) and a PCKε-selective peptide inhibitor. It decreases intracellular levels of amyloid-β (Aβ) in Neuro2 neuroblastoma cells transfected with human APPSwe/PS1Δ9.[2] DCP-LA also stimulates hippocampal glutamate release, striatal dopamine release, and hypothalamic serotonin release in rat brain slices in a PKC- and α7-containing nicotinic acetylcholine receptor-dependent manner.[3] *In vivo*, DCP-LA (3 mg/kg, i.p.) prevents synaptic loss and amyloid plaque formation and decreases escape latency in the Morris water maze in the 5XFAD transgenic mouse model of Alzheimer's disease.[4]

References

1. Kanno, T., Yamamoto, H., Yaguchi, T., *et al.* The linoleic acid derivative DCP-LA selectively activates PKC-ε, possibly binding to the phosphatidylserine binding site. *J. Lipid. Res.* **47(6)**, 1146-1156 (2006).
2. Nelson, T.J., Cui, C., Luo, Y., *et al.* Reduction of β-amyloid levels by novel protein kinase Cε activators. *J. Biol. Chem.* **284(50)**, 34514-34521 (2009).
3. Shimizu, T., Kanno, T., Tanaka, A., *et al.* α, β-DCP-LA selectively activates PKC-ε and stimulates neurotransmitter release with the highest potency among 4 diastereomers. *Cell Physiol. Biochem.* **27(2)**, 149-158 (2011).
4. Hongpaisan, J., Sun, M.-K., and Alkon, D.L. PKC ε activation prevents synaptic loss, Aβ elevation, and cognitive deficits in Alzheimer's disease transgenic mice. *J. Neurosci.* **31(2)**, 630-643 (2011).

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