Product Data Sheet

Product Name: Arachidonic Acid Leelamide
Cat. No.: GC16770

Chemical Properties

Cas. No.			
Chemical Name	1R,2,3,4,4aS,9,10,10aR-octahydro-1,4a-dimethyl-7-(1-methylethyl)-1-phenanthrene-5Z,8Z,11Z,14Z-eicosatetraenamide		
SMILES	CC(C)C(C=C1)=CC2=C1[C@]3(C)[C@](CC2)([H])[C@@](CN([H])C(CCC/C=C\C/C=C\C/C=C\C/C=C\CCCCC)=O)(C)CCC3		
Formula	$C_{40}H_{61}NO$	M.Wt	571.9
Solubility	≤20mg/ml in DMSO;20mg/ml in dimethyl formamide	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Arachidonic Acid Leelamide		

Background

Arachidonic acid leelamide is a phospholipase A2 inhibitor.

Phospholipase A is a hydrolase responsible for the release of arachidonic acid from the sn2 position of phospholipids. The released arachidonic acid is then converted to mediators of inflammation by the enzymes prostaglandin synthetase and 5lipoxygenase, respectively. The inhibition of phospholipase A leads to a decrease in the release of arachidonic acid and, consequently, the inflammatory mediators.

In vitro: Arachidonic acid leelamide is the arachidonic amide analog of leelamine with no published pharmacological properties. For leelamine, it was found that electron micrographs of leelamine-treated cancer cells had accumulation of autophagosomes, membrane whorls, and lipofuscin-like structures. In addition, leelamine-mediated killing was a caspase-independent event triggered by cholesterol accumulation in the early process [1].

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

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In vivo: In a previous study, authors identified the inductive effect of leelamine on CYP2B at doses of 5, 10, or 20 mg/kg in male ICR mice for 1 or 3 days. It was found that in liver, the activity of CYP2B significantly increased 3.6-fold after leelamine treatment. Activities of benzyloxyresorufin O-dealkylase and pentoxyresorufin O-dealkylase significantly increased 6.3- and 5.3-fold, respectively, with a single treatment of 20 mg/kg leelamine. Moreover, immunoblot analyses showed that significantly and dose-dependently increased CYP2B10 protein levels in liver. However, PCR results demonstrated that there were no significant changes in the CAR and CYP2B mRNA levels after leelamine treatment [2].

Clinical trial: So far, no clinical study has been conducted.

References:
[1] Kuzu OF, Gowda R, Sharma A, Robertson GP. Leelamine mediates cancer cell death through inhibition of intracellular cholesterol transport. Mol Cancer Ther. 2014 Jul;13(7):1690-703.
[2] Sim J, Nam W, Lee D, Lee S, O H, Joo J, Liu KH, Han JY, Ki SH, Jeong TC, Lee T, Lee S. Selective induction of hepatic cytochrome P450 2B activity by leelamine in vivo, as a potent novel inducer. Arch Pharm Res. 2015;38(5):725-33.

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