

Product Data Sheet

Product Name: 7-hydroxycoumarinyl Arachidonate

Cat. No.: GC10565

Chemical Properties

Cas. No. 161180-11-6

Chemical Name 5Z,8Z,11Z,14Z-eicosatetraenoic acid, 2-oxo-2H-1-benzopyran-7-yl ester

SMILES CCCCC/C=C\C/C=C\C/C=C\C/C=C\C/C=C\CCCC(=O)Oc1ccc2ccc(=O)oc2c1

Formula $C_{29}H_{36}O_4$

M.Wt 448.6

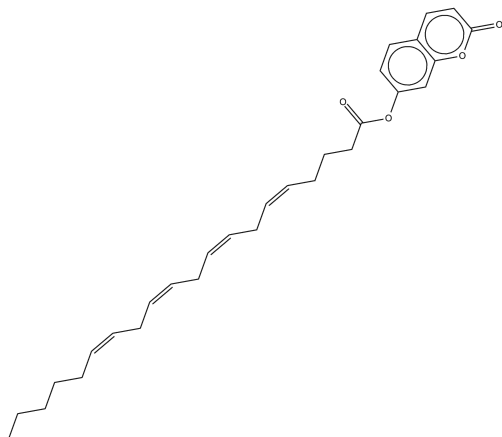
Solubility DMF: >50 mg/ml, DMSO: >25 mg/ml, Ethanol: >100 mg/ml, Ethanol:PBS (1:1): 50 µg/ml

Storage Store at -20°C, protect from light

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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



Background

7-hydroxycoumarinyl-arachidonate (7-HCA), a fluorogenic substrate for monoacylglycerol lipase (MAGL), can be used with MAGL as a novel fluorescence-based assay to screen small molecule inhibitors of MAGL.

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

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MAGL protein catalyzed the hydrolysis of 7-HCA to generate arachidonic acid and the highly fluorescent 7-hydroxyl coumarin (7-HC). 7-hydroxycoumarin (7-HC) can be monitored spectrophotometrically (excitation at 335 nm, emission at 450 nm). Release of 7-HC was measured using a fluorometer. MAGL protein catalyzed the hydrolysis of 7-HCA with an apparent K_m of 9.8 μM and V_{max} of 1.7 mmol/min/mg of protein. The assay is specific for MAGL as assay buffer alone or heat-denatured MAGL protein showed no significant activity against 7-HCA [1]. 7-hydroxycoumarinyl Arachidonate is the arachidonic acid ester of 7-hydroxycoumarin (umbelliferone) and can be used as a substrate for cPLA2. Hydrolysis of 7-hydroxycoumarinyl arachidonate by phospholipase resulted in the release of the fluorescent compound [2,3].

References:

- [1]. Wang Y, Chanda P, Jones P G, et al. A fluorescence-based assay for monoacylglycerol lipase compatible with inhibitor screening[J]. Assay and drug development technologies, 2008, 6(3): 387-393.
- [2]. Huang Z, Laliberte F, Tremblay N M, et al. A continuous fluorescence-based assay for the human high-molecular-weight cytosolic phospholipase A2[J]. Analytical biochemistry, 1994, 222(1): 110-115.
- [3]. Pickard R T, Chiou X G, Striffler B A, et al. Identification of essential residues for the catalytic function of 85-kDa cytosolic phospholipase A2 Probing the role of histidine, aspartic acid, cysteine, and arginine[J]. Journal of Biological Chemistry, 1996, 271(32): 19225-19231.

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