

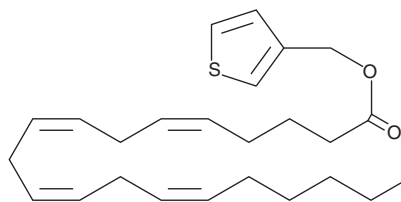
# Product Information



## CAY10412

Catalog No. 72620

**CAS Registry No.:** 390824-17-6  
**Formal Name:** 5Z,8Z,11Z,14Z-eicosatetraenoic acid, 3-thienylmethyl ester  
**MF:** C<sub>25</sub>H<sub>36</sub>O<sub>2</sub>S  
**FW:** 400.6  
**Purity:** ≥98%  
**Stability:** ≥1 year at -20°C  
**Supplied as:** A solution in methyl acetate



### Laboratory Procedures

For long term storage, we suggest that CAY10412 be stored as supplied at -20°C. It should be stable for at least one year.

CAY10412 is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of CAY10412 in these solvents is approximately 20 mg/ml.

CAY10412 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the methyl acetate solution of CAY10412 should be diluted with the aqueous buffer of choice. CAY10412 has a solubility of approximately 100 µg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Arachidonoyl ethanolamide (AEA) is an endogenous lipid with cannabinergic activity; along with 2-arachidonoyl glycerol, it forms part of the endocannabinoid system.<sup>1,2</sup> AEA undergoes reuptake into neurons by a facilitated process.<sup>3</sup> Controversy exists as to whether there is a specific AEA transporter, or instead the uptake process is simply driven by hydrolysis of AEA by intracellular fatty acyl amide hydrolase (FAAH).<sup>4,5</sup> CAY10412 is an analog of AEA that has no intrinsic binding affinity for either CB<sub>1</sub> or CB<sub>2</sub> receptors.<sup>6</sup> It is a potent inhibitor of AEA reuptake in U937 lymphoma cells, with an IC<sub>50</sub> of 3 µM.<sup>6</sup> CAY10412 could be a useful tool for distinguishing the competing transporter theories. The pharmacology of CAY10412 is largely unexplored; it may enhance endocannabinoid signaling by augmenting endocannabinoid concentrations.

### References

1. Devane, W.A., Hanus, L., Breuer, A., *et al.* Isolation and structure of a brain constituent that binds to the cannabinoid receptor. *Science* **258**, 1946-1949 (1992).
2. Felder, C.C., Briley, E.M., Axelrod, J., *et al.* Anandamide, an endogenous cannabimimetic eicosanoid, binds to the cloned human cannabinoid receptor and stimulates receptor-mediated signal transduction. *Proc. Natl. Acad. Sci. USA* **90**, 7656-7660 (1993).
3. Deutsch, D.G., Glaser, S.T., Howell, J.M., *et al.* The cellular uptake of anandamide is coupled to its breakdown by fatty-acid amide hydrolase. *J. Biol. Chem.* **276**(10), 6967-6973 (2001).
4. Beltramo, M., Stella, N., Calignano, A., *et al.* Functional role of high-affinity anandamide transport, as revealed by selective inhibition. *Science* **277**, 1094-1097 (1997).
5. Glaser, S.T., Abumrad, N.A., Fatade, F., *et al.* Evidence against the presence of an anandamide transporter. *Proc. Natl. Acad. Sci. USA* **100**(7), 4269-4274 (2003).
6. Lopez-Rodriguez, M.L., Viso, A., Ortega-Gutiérrez, S., *et al.* Design, synthesis and biological evaluation of novel arachidonic acid derivatives as highly potent and selective endocannabinoid transporter inhibitors. *J. Med. Chem.* **44**, 4505-4508 (2001).

### Related Products

Arachidonoyl Serotonin - Cat. No. 70665 • CAY10411 - Cat. No. 72610 • Arachidonoyl Ethanolamide - Cat. No. 90050 • Arvanil - Cat. No. 90052 • Arachidonoyl Dopamine - Cat. No. 90057 • AM404 - Cat. No. 90060 • Olvanil - Cat. No. 90262 • Oleoyl Ethanolamide - Cat. No. 90265 • Palmitoyl Ethanolamide - Cat. No. 90350

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

### MATERIAL SAFETY DATA

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