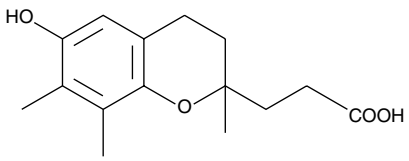
Product Information

γ-CEHC

Item No. 89630

CAS Registry No.: 178167-75-4
Formal Name: 3,4-dihydro-6-hydroxy-2,7,8-trimethyl-2H-1-Benzopyran-2-propanoic acid
Synonyms: γ-Tocopherol Metabolite, GTM, 2,7,8-trimethyl-2-(β-Carboxy-Ethyl)-6-Hydroxychroman
MF: $C_{15}H_{20}O_4$
FW: 264.3
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 296 nm



Laboratory Procedures

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

γ-CEHC is supplied as a crystalline solid. A stock solution may be made by dissolving the γ-CEHC in an organic solvent purged with an inert gas. γ-CEHC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of γ-CEHC in these solvents is approximately 25 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of γ-CEHC can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of γ-CEHC in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

The major tocopherol obtained from natural dietary sources is γ-tocopherol, whereas α-tocopherol is the form of Vitamin E typically obtained from synthetic supplements. γ-CEHC is a β-oxidized metabolite of dietary γ-tocopherol that functions as a natriuretic hormone.[1] It was initially purified and characterized from the urine of uremic patients, but it has since been found in urine from both control patients and those with congestive heart failure.[2] γ-CEHC is also anti-inflammatory, reducing 8-isoprostane and inflammatory eicosanoid synthesis in rat models.[3]

References

1. Christen, S., Woodall, A.A., Shigenaga, M.K., *et al.* γ-Tocopherol traps mutagenic electrophiles such as NOx and complements α-tocopherol: Physiological implications. *Proc. Natl. Acad. Sci. USA* **94**, 3217-3222 (1997).
2. Wechter, W.J., Kantoci, D., Murray, J.E.D., *et al.* A new endogenous natriuretic factor: LLU-α. *Proc. Natl. Acad. Sci. USA* **93,** 6002-6007 (1996).
3. Jiang, Q., Elson-Schwab, I., Courtemanche, C., *et al.* γ-Tocopherol and its major metabolite, in contrast to α-tocopherol, inhibit cyclooxygenase activity in macrophages and epithelial cells. *Proc. Natl. Acad. Sci. USA* **97**, 11494-11499 (2000).

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