

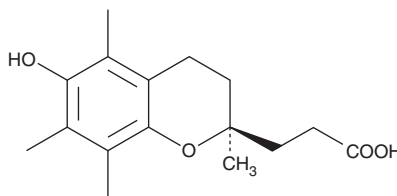
# Product Information



## $\alpha$ -CEHC

Item No. 10007705

**Formal Name:** 3,4-dihydro-6-hydroxy-2,5,7,8-tetramethyl-2H-1-benzopyran-2-propanoic acid  
**MF:** C<sub>16</sub>H<sub>22</sub>O<sub>4</sub>  
**FW:** 278.3  
**Purity:**  $\geq$ 98%  
**Stability:**  $\geq$ 2 years at -20°C  
**Supplied as:** A crystalline solid



### Laboratory Procedures

For long term storage, we suggest that  $\alpha$ -CEHC be stored as supplied at -20°C. It should be stable for at least two years.

$\alpha$ -CEHC is supplied as a crystalline solid. A stock solution may be made by dissolving the  $\alpha$ -CEHC in an organic solvent purged with an inert gas.  $\alpha$ -CEHC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of  $\alpha$ -CEHC in ethanol is approximately 10 mg/ml and 20 mg/ml in DMSO and DMF.

$\alpha$ -CEHC is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers,  $\alpha$ -CEHC should first be dissolved in DMSO and then diluted with the aqueous buffer of choice.  $\alpha$ -CEHC has a solubility of approximately 0.25 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Molecules having vitamin E antioxidant activity include four tocopherols ( $\alpha$ ,  $\beta$ ,  $\delta$ , and  $\gamma$ ) and four tocotrienols ( $\alpha$ ,  $\beta$ ,  $\delta$ , and  $\gamma$ ).<sup>1</sup>  $\alpha$ -Tocopherol is the major lipid soluble antioxidant *in vivo* and protects against lipid peroxidation.<sup>2</sup>  $\alpha$ -CEHC is the major urinary metabolite of  $\alpha$ -tocopherol following vitamin E supplementation.<sup>3</sup> The concentration of  $\alpha$ -CEHC in human serum is in the range of 5-10 pmol/ml but increases significantly up to 200 pmol/ml upon supplementation with RRR- $\alpha$ -tocopherol. About one-third of the  $\alpha$ -CEHC circulating in the blood is present as a glucuronide conjugate.<sup>4</sup>  $\alpha$ -CEHC is excreted when a threshold concentration of 7-9  $\mu$ mol  $\alpha$ -tocopherol/g total lipid in plasma is exceeded. Therefore, excretion of  $\alpha$ -CEHC may be considered to be a marker of optimum vitamin E intake.<sup>5</sup>

### References

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2. Burton, G.W., Joyce, A., and Ingold, K.U. Is vitamin E the only lipid-soluble, chain-breaking antioxidant in human blood plasma and erythrocyte membranes? *Arch. Biochem. Biophys.* **221**(1), 281-290 (1983).
3. Traber, M.G., Elsner, A., and Brigelius-Flohé, R. Synthetic as compared with natural vitamin E is preferentially excreted as  $\alpha$ -CEHC in human urine: Studies using deuterated  $\alpha$ -tocopheryl acetates. *FEBS Lett.* **437**, 145-148 (1998).
4. Stahl, W.S., Graf, P., Brigelius-Flohé, R., *et al.* Quantification of the  $\alpha$ - and  $\gamma$ -tocopherol metabolites 2,5,7,8-tetramethyl-2-(2'-carboxyethyl)-6-hydroxychroman and 2,7,8-trimethyl-2-(2'-carboxyethyl)-6-hydroxychroman in human serum. *Anal. Biochem.* **275**, 254-259 (1999).
5. Schultz, M., Leist, M., Petrzika, M., *et al.* Novel urinary metabolite of  $\alpha$ -tocopherol, 2,5,7,8-tetramethyl-2-(2'-carboxyethyl)-6-hydroxychroman, as an indicator of an adequate vitamin E supply. *Am. J. Clin. Nutr.* **62**(6), 1527S-34S (1995).

### Related Products

$\gamma$ -CEHC - Item No. 89630 • Elaidic Acid - Item No. 90250 •  $\delta$ -CEHC - Item No. 10007706

**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

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent *via* email to your institution.

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