

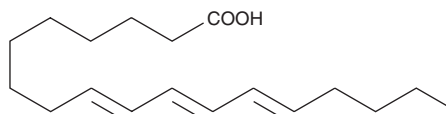
# PRODUCT INFORMATION



## 9(E),11(E),13(E)-Octadecatrienoic Acid

Item No. 22976

**CAS Registry No.:** 544-73-0  
**Formal Name:** 9E,11E,13E-octadecatrienoic acid  
**Synonyms:**  $\beta$ -Eleostearic Acid,  $\beta$ -ESA, FA 18:3  
**MF:** C<sub>18</sub>H<sub>30</sub>O<sub>2</sub>  
**FW:** 278.4  
**Purity:**  $\geq$ 97%  
**UV/Vis.:**  $\lambda_{\text{max}}$ : 258, 268, 279 nm  
**Supplied as:** A solution in methanol  
**Storage:** -20°C  
**Stability:**  $\geq$ 1 year



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

9(E),11(E),13(E)-Octadecatrienoic acid ( $\beta$ -ESA) is supplied as a solution in methanol. To change the solvent, simply evaporate the methanol 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  $\beta$ -ESA in these solvents is approximately 20, 10, and 30 mg/ml, respectively.

### Description

$\beta$ -ESA is a conjugated polyunsaturated fatty acid that is found in plant seed oils and in mixtures of conjugated linolenic acids synthesized by the alkaline isomerization of linolenic acid.<sup>1</sup> It reduces growth of Caco-2 colon cancer cells in a dose-dependent and time-dependent manner. *In vitro*,  $\beta$ -ESA induces DNA fragmentation and upregulation of pro-apoptotic Bax mRNA.  $\beta$ -ESA decreases protein expression of the apoptosis suppression factor Bcl-2 and induces apoptosis in T24 bladder cancer cells *via* production of reactive oxygen species.<sup>2</sup> It also inhibits bacterial fatty acid dioxygenase with a K<sub>i</sub> value of 49 nM *in vitro*.<sup>3</sup>

### References

1. Yasui, Y., Hosokawa, M., Kohno, H., *et al.* Growth inhibition and apoptosis induction by all-trans-conjugated linolenic acids on human colon cancer cells. *Anticancer Res.* **26(3A)**, 1855-1860 (2006).
2. Sun, Z., Wang, H., Ye, S., *et al.* Beta-eleostearic acid induce apoptosis in T24 human bladder cancer cells through reactive oxygen species (ROS)-mediated pathway. *Prostaglandins Other Lipid Mediat.* **99(1-2)**, 1-8 (2012).
3. Mashhadi, Z., Boeglin, W.E., and Brash, A.R. Robust inhibitory effects of conjugated linolenic acids on a cyclooxygenase-related linoleate 10S-dioxygenase: Comparison with COX-1 and COX-2. *Biochim. Biophys. Acta* **1851(10)** (2015).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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