

## PRODUCT DATA SHEET

### 9(Z),11(E)-Octadecadienoic acid (Na<sup>+</sup> salt)

**Catalog No:** 1278

**Common Name:** 9-*cis*,11-*trans* CLA (Na<sup>+</sup> salt)

**Source:** synthetic

**Solubility:** water, methanol, DMSO

**CAS No:** N/A

**Molecular Formula:** C<sub>18</sub>H<sub>31</sub>NaO<sub>2</sub>

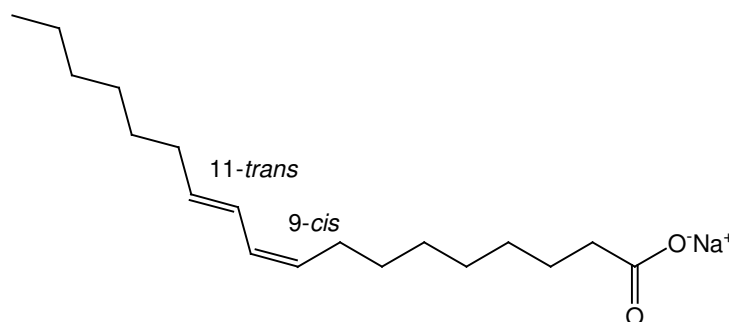
**Molecular Weight:** 302

**Storage:** -20°C

**Purity:** TLC: >98%; GC: >98%; identity confirmed by MS

**TLC System:** hexane/ethyl ether/acetic acid (80:20:1 by Vol.)

**Appearance:** solid



### **Application notes:**

9(Z),11(E)-Octadecadienoic acid, Na<sup>+</sup> salt is a conjugated linoleic acid (CLA) that has unique water soluble properties. One major challenge to the study of CLA isomers is its mode of introduction. By making it water soluble, this CLA salt can now be introduced into various aqueous systems, thereby reducing method variations.

CLA is found mostly in lipids originating in ruminant animals including dairy products. It has several biological properties including anti-carcinogenic activity, suppressing *in vitro* growth of human melanoma, colorectal, and breast cancer cells, and exhibiting anti-atherogenic activity.<sup>1</sup> It is thought that CLA itself may not have anti-oxidant capabilities but may produce substances which protect cells from the detrimental effects of peroxides. 9(Z),11(E)-Octadecadienoic acid is the major natural isomer of CLA constituting 73% to 93% of the total CLA in dairy products<sup>2</sup> and it appears to be the most biologically active isomer. It has been shown to enhance animal growth and inhibit osteoclast formation and activity from human cells,<sup>3</sup> as well as decrease LDL:HDL and total HDL:cholesterol levels in humans.<sup>4</sup>

### **Selected References:**

1. Helen B. MacDonald "Conjugated Linoleic Acid and Disease Prevention: A Review of Current Knowledge" *Journal of the American College of Nutrition*, Vol. 19, No. 90002, 111S-118S, 2000
2. M. Belury, "DIETARY CONJUGATED LINOLEIC ACID IN HEALTH: Physiological Effects and Mechanisms of Action" *Annual Review of Nutrition*, July Vol. 22: 505, 2002
3. Ilana Platt, Ahmed El-Soheby "Effects of 9-*cis*,11-*trans* and 10-*trans*,12-*cis* CLA on osteoclast formation and activity from human CD14+ monocytes" *Lipids in Health and Disease*, 8:15, 2009
4. S. Tricon, et al., "Opposing effects of *cis*-9,*trans*-11 and *trans*-10,*cis*-12 conjugated linoleic acid on blood lipids in healthy humans" *The American Journal of Clinical Nutrition*, 80:614, 2004

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