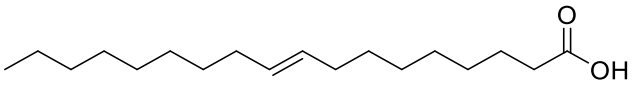
PRODUCT DATA SHEET

Octadecenoic acid (*trans*-9)

Catalog number: 1149
Common name: C18:1 (*trans*-9) Fatty acid; Elaidic acid
Source: synthetic
Solubility: chloroform, hexane, ethyl ether
CAS number: 112-79-8

Molecular Formula: $C_{18}H_{34}O_2$
Molecular Weight: 282
Storage: -20°C
Purity: TLC: 99%,GC >99%
TLC System: hexane/ethyl ether/acetic acid (80:20:1 by vol.)
Appearance: solid



Application Notes:

This product is a *trans* fatty acid that is an isomer of oleic acid. Much of the fatty acid content in partially hydrogenated fats is elaidic acid due to the oleic acid being converted to its *trans* isomer. Elaidic acid is an enhancer of cholesteryl ester transfer protein activity which increases low density lipoprotein cholesterol and decreases high density lipoprotein cholesterol.[1] Consumption of *trans* fats has long been suspected to increase the risk of cardiovascular disease, change the blood lipid profiles, alter endothelial functions, and affect immune function. Elaidic acid has been found to cause a pro-inflammatory T-cell response[2] and it increases the concentration of lipoprotein LP(a).[3] Recently, elaidic acid from partially hydrogenated fats has been implicated in the development of preeclampsia.[4]

Selected References:

1. M. Abbey and P. Nestel "Plasma cholesteryl ester transfer protein activity is increased when *trans*-elaidic acid is substituted for *cis*-oleic acid in the diet" *Atherosclerosis*, Vol. 106(1) pp. 99-107, *1994*
2. M. Ruth et al. "Vaccenic and Elaidic Acid Modify Plasma and Splenocyte Membrane Phospholipids and Mitogen-Stimulated Cytokine Production in Obese Insulin Resistant JCR: LA-*cp* Rats" *Nutrients*, Vol. 2 pp. 181-197, *2010*
3. P. Nestel et al. "Plasma lipoprotein lipid and Lp(a) changes with substitution of elaidic acid for oleic acid in the diet" *Journal of Lipid Research*, Vol. 33 pp. 1029-1036, *1992*
4. M. Williams et al. "Risk of Preeclampsia in Relation to Elaidic Acid (*Trans* Fatty Acid) in Maternal Erythrocytes" *Gynecologic and Obstetric Investigation*, Vol. 46(2), *1998*

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