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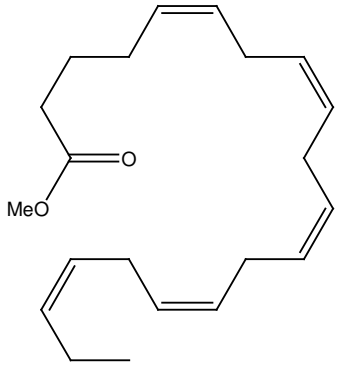
PRODUCT DATA SHEET

Methyl eicosapentaenoate (all *cis*-5,8,11,14,17)

Catalog No: 1194
Common Name: Methyl ester of *omega*-3 fatty acid; C20:5 (all *cis*-5,8,11,14,17) Methyl ester
Source: natural, fish oil
Solubility: chloroform, ethyl ether, hexane
CAS No: 2734-47-6

Molecular Formula: $C_{21}H_{32}O_2$
Molecular Weight: 316
Storage: -20°C
Purity: TLC 99%, GC > 99%
TLC System: hexane/ethyl ether (80:20)
Appearance: liquid



Application Notes:

Methyl eicosapentaenoate is an ideal gas chromatography standard. Eicosapentaenoic acid (EPA) is an *omega*-3 fatty acid and is an essential fatty acid in mammals. It is among the most abundant polyunsaturated fatty acids in fish oil although fish obtain EPA from algae. Levels of EPA (and other *omega*-3 fatty acids) have been linked to many diseases and disorders. Low levels of EPA are associated with depression, schizophrenia, and Alzheimer's disease[1] and supplementation with EPA is being investigated for its use as a treatment. However, a diet rich in EPA may lead to enhanced lipid peroxidation. It is anti-hyperlipoproteinic (helps prevent abnormal lipid levels in the blood) and it is thought to help reduce the risk of atherosclerosis, sudden cardiac death, neurodegeneration, and various inflammatory disorders. EPA is also thought to be able to increase the beneficial effects of chemotherapy and may help to prevent cancer and attenuate responses of T-cells and macrophages. EPA also improves insulin sensitivity while at the same time inhibiting cell proliferation[2] and has been found to activate epithelial sodium channels. Recent studies suggest that oxidized (as opposed to native) EPA is responsible for anti-atherosclerotic, anti-inflammatory, and anti-proliferative effects.[3]

Selected References:

1. C. Song, S. Zhao "*Omega*-3 fatty acid eicosapentaenoic acid. A new treatment for psychiatric and neurodegenerative diseases: a review of clinical investigations." *Expert Opin Investig Drugs*, Vol. 16(10) pp. 1627-1638, *2007*
2. Masahiro Murata "Dual Action of Eicosapentaenoic Acid in Hepatoma Cells UP-REGULATION OF METABOLIC ACTION OF INSULIN AND INHIBITION OF CELL PROLIFERATION" *Journal of Biological Chemistry,* Vol. 276 pp. 31422-31428, *2001*
3. Jason D. Morrow "Formation of Highly Reactive Cyclopentenone Isoprostane Compounds (A_3/J_3-Isoprostanes) *in Vivo* from Eicosapentaenoic Acid" *Journal of Biological Chemistry,* Vol. 283 pp. 12043-12055, *2008*