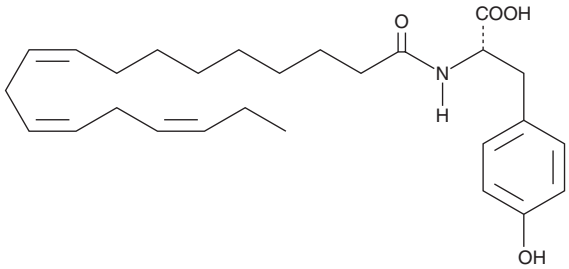
PRODUCT INFORMATION

N-(α-Linolenoyl) Tyrosine

Item No. 10032

CAS Registry No.: 259143-19-6
Formal Name: N-[(9Z,12Z,15Z)-1-oxo-9,12,15-octadecatrien-1-yl]-L-tyrosine
Synonym: NALT
MF: $C_{27}H_{39}NO_4$
FW: 441.6
Purity: ≥98%
UV/Vis.: λ_{max}: 226, 278 nm
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

N-(α-Linolenoyl) tyrosine is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of N-(α-linolenoyl) tyrosine in these solvents is approximately 30 mg/ml.

N-(α-Linolenoyl) tyrosine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of N-(α-linolenoyl) tyrosine should be diluted with the aqueous buffer of choice. The solubility of N-(α-linolenoyl) tyrosine in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Certain chronic neurologic disorders, such as Parkinson's disease, are caused by an insufficiency of the neurotransmitter dopamine secondary to the degeneration of substantia nigra dopaminergic neurons.[1] N-(α-Linolenoyl) tyrosine (NALT) is a simple α-amide conjugate between the ω-3 essential fatty acid α-linolenate and the amino acid tyrosine. α-Linolenate is an important precursor to docosahexaenoic acid (DHA), a prominent brain polyunsaturated fatty acid, while tyrosine is the metabolic precursor for neuronal dopamine synthesis. NALT was prepared as a method for enhancing central nervous system (CNS) dopamine content by facilitated transport of the tyrosine precursor across the blood-brain barrier.[2] In experimental rat models of dopamine insufficiency, NALT increased CNS dopamine levels and exhibited an activity profile consistent with an anti-Parkinson's therapeutic agent.[2]

References

1. Martin, J.B. Molecular basis of the neurodegenerative disorders. *N. Engl. J. Med.* **340(25)**, 1970-1980 (1999).
2. Yehuda, S. Possible anti-Parkinson properties of N-(α-linolenoyl) tyrosine: A new molecule. *Pharmacol. Biochem. Behav.* **72(1-2)**, 7-11 (2002).

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