

PRODUCT DATA SHEET

3-keto-C6-Dihydrosphingosine • HCl

Catalog number: 1891

Synonyms: 1-Hydroxy-2-amino-3-keto
hexane • HCl

Source: synthetic

Solubility: ethanol, methanol, DI water

CAS number: 1314999-30-8

Molecular Formula: C₆H₁₃NO₂ • HCl

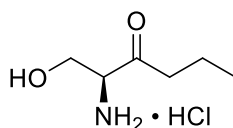
Molecular Weight: 168

Storage: -20°C

Purity: TLC: 98%, identity confirmed by MS

TLC System: chloroform/methanol (80:20 by vol.)

Appearance: solid



Application Notes:

3-keto-Dihydrosphingosine is a vital intermediate in the biosynthesis of ceramides.^{1,2} This *lyso*-sphingolipid is formed by the condensation of L-serine and palmitoyl-CoA by the serine palmitoyl transferase enzyme.³ It is then reduced to dihydrosphingosine, converted to ceramide, and eventually synthesized into many types of sphingolipids. C18-keto-dihydrosphingosine is the major sphingolipid precursor in the early and intermediate stages of cell life with C20-keto-dihydrosphingosine as a minor component. Towards the end of the cell's life the ratio of C18 to C20 keto-dihydrosphingosine becomes more equal. It is a critical regulating step in the availability of sphingolipids in cells. Vitamin K deficiency results in the inactivation of the serine palmitoyl transferase enzyme causing a resultant shortage of sphingolipids. Short-chain analogs of 3-keto-dihydrosphingosine have different physical properties from the long-chain 3-keto-dihydrosphingosines. Short-chain bases are considerably less hydrophobic which could significantly change the process of signal transduction.

Selected References:

1. N. Bartke and Y. Hannun "Bioactive sphingolipids: metabolism and function" *Journal of Lipid Research*, Vol. 50 pp. S91-S96, 2009
2. G. Jenkins and Y. Hannun "Role for *de Novo* Sphingoid Base Biosynthesis in the Heat-induced Transient Cell Cycle Arrest of *Saccharomyces cerevisiae*" *Journal of Biological Chemistry*, Vol. 276 pp. 8574-8581, 2001
3. A. Batheja et al. "Characterization of Serine Palmitoyltransferase in Normal Human Tissues" *Journal of Histochemistry and Cytochemistry*, Vol. 51 pp. 687-696, 2003

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