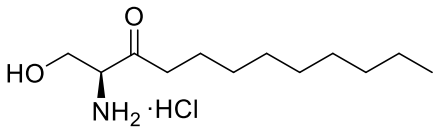
PRODUCT DATA SHEET

3-keto-C12-Dihydrosphingosine • HCl

Catalog number: 1893
Synonyms: 1-Hydroxy-2-amino-3-keto-dodecane·HCl
Source: synthetic
Solubility: chloroform, methanol, ethanol
CAS number: 1823032-02-5

Molecular Formula: $C_{12}H_{25}NO_2$ • HCl
Molecular Weight: 215+HCl
Storage: -20ºC
Purity: TLC: >98%; identity confirmed by MS
TLC System: chloroform/methanol (80:20)
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*

2178 High Tech Road, State College, PA 16803
www.matreya.com · Phone (814) 355-1030 · Fax (814) 355-1031

DS1893 Rev. #5
November 2, 2021