

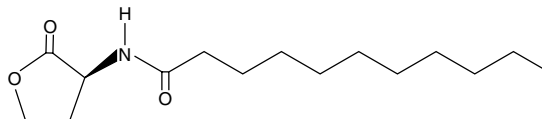
Product Information



N-undecanoyl-L-Homoserine lactone

Item No. 16827

CAS Registry No.: 216596-71-3
Formal Name: N-[(3S)-tetrahydro-2-oxo-3-furanyl]-undecanamide
Synonym: C11-HSL
MF: C₁₅H₂₇NO₃
FW: 269.4
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that N-undecanoyl-L-homoserine lactone (C11-HSL) be stored as supplied at -20°C. It should be stable for at least two years.

C11-HSL is supplied as a crystalline solid. A stock solution may be made by dissolving the C11-HSL in an organic solvent purged with an inert gas. C11-HSL is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of C11-HSL in these solvents is approximately 20 mg/ml. While C11-HSL is also soluble in ethanol and other primary alcohols, their use is not recommended as they have been shown to open the lactone ring.

If aqueous stock solutions are required for biological experiments, they can best be prepared by diluting the organic solvent into aqueous buffers or isotonic saline. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Quorum sensing is a regulatory system used by bacteria for controlling gene expression in response to increasing cell density.¹ This regulatory process manifests itself with a variety of phenotypes including biofilm formation and virulence factor production.² Coordinated gene expression is achieved by the production, release, and detection of small diffusible signal molecules called autoinducers. The N-acylated homoserine lactones (AHLs) comprise one such class of autoinducers, each of which generally consists of a fatty acid coupled with HSL. Regulation of bacterial quorum sensing signaling systems to inhibit pathogenesis represents a new approach to antimicrobial therapy in the treatment of infectious diseases.³ AHLs vary in acyl group length (C4-C18), in the substitution of C3 (hydrogen, hydroxyl, or oxo group), and in the presence or absence of one or more carbon-carbon double bonds in the fatty acid chain. These differences confer signal specificity through the affinity of transcriptional regulators of the LuxR family.⁴ C11-HSL possesses a rare odd-numbered acyl carbon chain and may be a minor quorum-sensing signaling molecule in *P. aeruginosa* strains.⁵

References

1. González, J.E. and Keshavan, N.D. Messing with bacterial quorum sensing. *Microbiology and Molecular Biology Reviews* **70**(4), 859-875 (2006).
2. Gould, T.A., Herman, J., Krank, J., *et al.* Specificity of acyl-homoserine lactone syntheses examined by mass spectrometry. *J. Bacteriol.* **188**(2), 773-783 (2006).
3. Cegelski, L., Marshall, G.R., Eldridge, G.R., *et al.* The biology and future prospects of antivirulence therapies. *Nature Reviews Microbiology* **6**(1), 17-27 (2008).
4. Penalver, C.G.N., Morin, D., Cantet, F., *et al.* Methylobacterium extorquens AM1 produces a novel type of acyl-homoserine lactone with a double unsaturated side chain under methylotrophic growth conditions. *FEBS Lett.* **580**, 561-567 (2006).
5. Sio, C.F., Otten, L.G., Cool, R.H., *et al.* Quorum quenching by an N-acyl-homoserine lactone acylase from *Pseudomonas aeruginosa* PAO1. *Infect. Immun.* **74**(3), 1673-1682 (2006).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/16827

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman **warrants only** to the original customer that the material will **meet our specifications at the time of delivery.**

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have **any obligation or liability**, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees.

Buyer's **exclusive remedy** and Cayman's sole liability hereunder shall be limited to a **refund** of the purchase price, or at Cayman's option, the **replacement**, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our **Warranty and Limitation of Remedy located on our website and in our catalog.**

Copyright Cayman Chemical Company, 06/05/2014

Cayman Chemical

Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com