

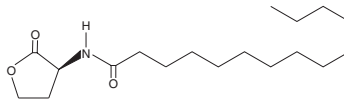
PRODUCT INFORMATION



N-tetradecanoyl-L-Homoserine lactone

Item No. 10011200

CAS Registry No.: 202284-87-5
Formal Name: N-[(3S)-tetrahydro-2-oxo-3-furanyl]-tetradecanamide
Synonyms: C14-HSL, tDHL
MF: C₁₈H₃₃NO₃
FW: 311.5
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

N-tetradecanoyl-L-homoserine lactone (C14-HSL) is supplied as a crystalline solid. A stock solution may be made by dissolving the C14-HSL in an organic solvent purged with an inert gas. C14-HSL is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of C14-HSL in these solvents is approximately 30 mg/ml. While C14-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.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of C14-HSL can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of C14-HSL in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Quorum sensing is a regulatory system used by bacteria for controlling gene expression in response to increasing cell density. Controlling bacterial infections by quenching their quorum sensing systems is a promising field of study. The expression of specific target genes, such as transcriptional regulators belonging to the LuxR family of proteins, is coordinated by the synthesis of diffusible acylhomoserine lactone (AHL) molecules. C14-HSL is a small diffusible signaling molecule involved in quorum sensing, thereby controlling gene expression and affecting cellular metabolism in bacteria.¹⁻³ It appears later than shorter acyl chain AHLs in developing biofilms⁴ and, like other long chain AHLs, stimulates bacterial growth.⁵ C14-HSL also alters the proteolytic activity and enhances the migration of some strains of *Proteus mirabilis*.⁶

References

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5. Huang, J.J., Han, J.-I., Zhang, L.-H., et al. *Appl. Environ. Microbiol.* **69(10)**, 5941-5949 (2003).
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WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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