

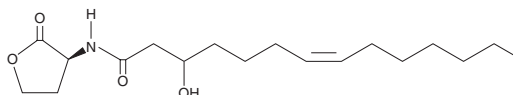
# PRODUCT INFORMATION



## N-(3-hydroxy-7-cis tetradecenoyl)-L-Homoserine lactone

Item No. 9002939

**CAS Registry No.:** 273734-65-9  
**Formal Name:** 3-hydroxy-N-[(3S)-tetrahydro-2-oxo-3-furanyl]-7Z-tetradecenamide  
**Synonym:** N-(3-hydroxy-7-cis tetradecenoyl)-L-HSL  
**MF:** C<sub>18</sub>H<sub>31</sub>NO<sub>4</sub>  
**FW:** 325.4  
**Purity:** ≥95%  
**Supplied as:** A solution in methyl acetate  
**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-(3-hydroxy-7-cis tetradecenoyl)-L-Homoserine lactone is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate 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-(3-hydroxy-7-cis tetradecenoyl)-L-homoserine lactone in these solvents is approximately 20 mg/ml. While N-(3-hydroxy-7-cis tetradecenoyl)-L-homoserine lactone is also soluble in ethanol and other primary alcohols, their use is not recommended as they have been shown to open the lactone ring.

For maximum solubility in aqueous buffers, evaporate the methyl acetate and dissolve in DMSO. The solution of N-(3-hydroxy-7-cis tetradecenoyl)-L-homoserine lactone should be diluted with the aqueous buffer of choice. N-(3-hydroxy-7-cis tetradecenoyl)-L-Homoserine lactone has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method.

### Description

N-(3-hydroxy-7-cis tetradecenoyl)-L-Homoserine lactone is a long-chain N-acyl-homoserine lactone (AHL) produced by some Gram-negative bacteria and is involved in quorum sensing.<sup>1</sup> Quorum sensing enables bacteria to change gene expression based on cues from nearby bacteria and from eukaryotic hosts about nutrients, environmental conditions, or threats.<sup>2</sup> Due to the benefit of quorum sensing for bacterial survival, quorum sensing molecules are potential targets for controlling bacterial infections.<sup>3</sup> In mouse and human leukocyte immunoassays using LPS-stimulated macrophages, N-(3-hydroxy-7-cis tetradecenoyl)-L-homoserine lactone did not have an effect on cytokine or antibody production.<sup>4</sup>

### References

1. Laue, B.E., Jiang, Y., Chhabra, S.R., *et al.* The biocontrol strain *Pseudomonas fluorescens* F113 produces the *Rhizobium small* bacteriocin, N-(3-hydroxy-7-cis-tetradecenoyl)homoserine lactone, via HdtS, a putative novel N-acylhomoserine lactone synthase. *Microbiology* **146** (Pt. 10), 2469-2480 (2000).
2. Williams, P. Quorum sensing, communication and cross-kingdom signalling in the bacterial world. *Microbiology* **153** (Pt 12), 3923-3938 (2007).
3. Meng, L.-J. and Sjövall, J. Method for combined analysis of profiles of conjugated progesterone metabolites and bile acids in serum and urine of pregnant women. *J. Chromatogr. B* **688**(1), 11-26 (1997).
4. Telford, G., Wheeler, D., Williams, P., *et al.* The *Pseudomonas aeruginosa* quorum-sensing signal molecule N-(3-oxododecanoyl)-L-homoserine lactone has immunomodulatory activity. *Infect. Immun.* **66**(1), 36-42 (1998).

#### 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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