

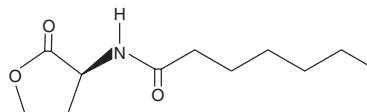
# PRODUCT INFORMATION



## N-heptanoyl-L-Homoserine lactone

Item No. 10011198

**CAS Registry No.:** 177158-20-2  
**Formal Name:** N-[(3S)-tetrahydro-2-oxo-3-furanyl]-heptanamide  
**Synonym:** C7-HSL  
**MF:** C<sub>11</sub>H<sub>19</sub>NO<sub>3</sub>  
**FW:** 213.3  
**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-heptanoyl-L-homoserine lactone (C7-HSL) is supplied as a crystalline solid. A stock solution may be made by dissolving the C7-HSL in an organic solvent purged with an inert gas. C7-HSL is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of C7-HSL in these solvents is approximately 20 mg/ml. While C7-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.

C7-HSL is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, C7-HSL should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. C7-HSL has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. 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 involved in a promising field of study. The expression of specific target genes, such as transcriptional regulators belonging to the LuxIR family of proteins, is coordinated by synthesis of diffusible acylhomoserine lactone (AHL) molecules. C7-HSL is a small diffusible signaling molecule involved in quorum sensing, thereby controlling gene expression and affecting cellular metabolism.<sup>1,2</sup> The diverse applications of this molecule include regulation of virulence, infection prevention, and septicemia in fish.<sup>3</sup>

### References

1. Lithgow, J.K., Wilkinson, A., Hardman, A., *et al.* The regulatory locus *cinRI* in *Rhizobium leguminosarum* controls a network of quorum-sensing loci. *Mol. Microbiol.* **37(1)**, 81-97 (2000).
2. Barnard, A.M.L. and Salmond, G.P.C. Quorum sensing: The complexities of chemical communication between bacteria. *Complexus* **5(2)**, 87-101 (2004).
3. Morohoshi, T., Inaba, T., Kato, N., *et al.* Identification of quorum-sensing signal molecules and the LuxRI homologs in fish pathogen *Edwardsiella tarda*. *J. Biosci. Bioeng.* **98(4)**, 274-281 (2004).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 01/31/2024

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM