# PRODUCT INFORMATION

## N-hexanoyl-L-Homoserine lactone

*Item No. 10007896*

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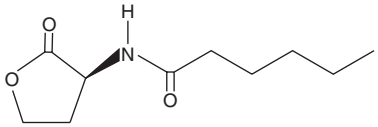
|---|---|
| **CAS Registry No.:** | 147852-83-3 |
| **Formal Name:** | N-[(3S)-tetrahydro-2-oxo-3-furanyl]-hexanamide |
| **Synonym:** | C6-HSL |
| **MF:** | $C_{10}H_{17}NO_3$ |
| **FW:** | 199.2 |
| **Purity:** | ≥95% |
| **Supplied as:** | A crystalline solid |
| **Storage:** | -20°C |
| **Stability:** | ≥4 years |



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

### Laboratory Procedures

N-hexanoyl-L-homoserine lactone (C6-HSL) is supplied as a crystalline solid. A stock solution may be made by dissolving the C6-HSL in organic solvents such as DMSO and dimethyl formamide. The solubility of C6-HSL in these solvents is approximately 30 mg/ml. While C6-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 C6-HSL can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of C6-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. A promising field of study involves controlling bacterial infections by quenching their quorum sensing systems. 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. C6-HSL is a small diffusible signaling molecule involved in quorum sensing, controlling gene expression, and affecting cellular metabolism.[1] The diverse applications of this molecule include regulation of virulence in general and in cystic fibrosis, infection prevention, slime and biofilm reduction in commercial agriculture and aquaculture industries, food spoilage prevention, and septicemia in fish.[2-8]

### References


1. Gould, T.A., Herman, J., Krank, J., *et al. J. Bacteriol.* **188(2)**, 773-783 (2006).
2. Morohoshi, T., Inaba, T., Kato, N., *et al. Journal of Bioscience and Bioengineering* **98(4)**, 274-281 (2004).
3. Ulrich, R.L., Hines, H.B., Parthasarathy, N., *et al. J. Bacteriol.* **186(13)**, 4350-4360 (2004).
4. Wang, L.-H., Weng, L.-X., Dong, Y.-H., *et al. J. Biol. Chem.* **279(14)**, 13645-13651 (2004).
5. Yates, E.A., Philipp, B., Buckley, C., *et al. Infect. Immun.* **70(10)**, 5635-5646 (2002).
6. Luo, Z.-Q., Su, S., and Farrand, S.K. *J. Bacteriol.* **186(19)**, 5665-5672 (2003).
7. Chambers, C.E., Visser, M.B., Schwab, U., *et al. FEMS Microbiol. Lett.* **244(2)**, 297-304 (2005).
8 Christensen, A.B., Riedel, K., Eberl, L., *et al. Microbiology* **149(Pt 2)**, 471-483 (2003).





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