

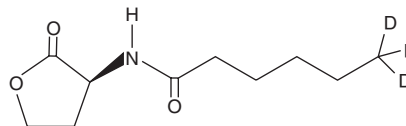
# PRODUCT INFORMATION



## N-hexanoyl-L-Homoserine lactone-d<sub>3</sub>

Item No. 10007897

**CAS Registry No.:** 2705226-73-7  
**Formal Name:** N-[(3S)-tetrahydro-2-oxo-3-furanyl]-  
hexanamide-6,6,6-d<sub>3</sub>  
**Synonym:** C6-HSL-d<sub>3</sub>  
**MF:** C<sub>10</sub>H<sub>14</sub>D<sub>3</sub>NO<sub>3</sub>  
**FW:** 202.3  
**Chemical Purity:** ≥98% (N-hexanoyl-L-Homoserine lactone)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>3</sub>); ≤1% d<sub>0</sub>  
**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-d<sub>3</sub> (C6-HSL-d<sub>3</sub>) is supplied as a crystalline solid. A stock solution may be made by dissolving the C6-HSL-d<sub>3</sub> in an organic solvent purged with an inert gas. C6-HSL-d<sub>3</sub> is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of C6-HSL-d<sub>3</sub> in these solvents is approximately 30 mg/ml. While C<sub>6</sub>-HSL-d<sub>5</sub> is also soluble in ethanol and other primary alcohols, their use is not recommended as they have been shown to open the lactone ring.

C6-HSL-d<sub>3</sub> is used as an internal standard for the quantification of C6-HSL by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

### 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.<sup>1</sup> 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.<sup>2-8</sup>

### References

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5. Yates, E.A., Philipp, B., Buckley, C., et al. *Infect. Immun.* **70(10)**, 5635-5646 (2002).
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7. Chambers, C.E., Visser, M.B., Schwab, U., et al. *FEMS Microbiol. Lett.* **244(2)**, 297-304 (2005).
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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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#### 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