

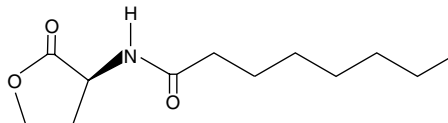
Product Information



N-octanoyl-L-Homoserine lactone

Item No. 10011199

CAS Registry No.: 147852-84-4
Formal Name: N-[(3S)-tetrahydro-2-oxo-3-furanyl]-
octanamide
Synonyms: C8-HSL, OHL
MF: C₁₂H₂₁NO₃
FW: 227.3
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that N-octanoyl-L-homoserine lactone (C8-HSL) be stored as supplied at -20°C. It should be stable for at least two years.

C8-HSL is supplied as a crystalline solid. A stock solution may be made by dissolving the C8-HSL in an organic solvent purged with an inert gas. C8-HSL is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of C8-HSL in these solvents is approximately 20 mg/ml. While C8-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.

C8-HSL is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, C8-HSL should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. C8-HSL has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

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 LuxIR family of proteins, is coordinated by synthesis of diffusible acylhomoserine lactone (AHL) molecules. C8-HSL is a small diffusible signaling molecule involved in quorum sensing, thereby controlling gene expression and affecting cellular metabolism.¹⁻³ The applications of this molecule include infection prevention and regulation of virulence in general and in cystic fibrosis.^{4,5}

References

1. Kuo, A., Blough, N.V., and Dunlap, P.V. Multiple N-acyl-L-homoserine lactone autoinducers of luminescence in the marine symbiotic bacterium *Vibrio fischeri*. *J. Bacteriol.* **176**(24), 7558-7565 (1994).
2. 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).
3. McClean, K.H., Winson, M.K., Fish, L., *et al.* Quorum-sensing and *Chromobacterium violaceum*: Exploitation of violacein production and inhibition for the detection of N-acylhomoserine lactones. *Microbiology* **143**, 3703-3711 (1997).
4. Riedel, K., Hentzer, M., Geisenberger, O., *et al.* N-acylhomoserine-lactone-mediated communication between *Pseudomonas aeruginosa* and *Burkholderia cepacia* in mixed biofilms. *Microbiology* **147**, 3249-3262 (2001).
5. Winson, M.K., Camara, M., Latifi, A., *et al.* Multiple N-acyl-L-homoserine lactone signal molecules regulate production of virulence determinants and secondary metabolites in *Pseudomonas aeruginosa*. *Proc. Natl. Acad. Sci. USA* **92**, 9427-9431 (1995).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/10011199

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY; NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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