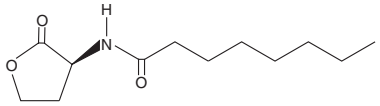
PRODUCT INFORMATION

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:	$C_{12}H_{21}NO_3$
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-octanoyl-L-homoserine lactone (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.

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 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

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2. Lithgow, J.K., Wilkinson, A., Hardman, A., *et al. Mol. Microbiol.* **37(1)**, 81-97 (2000).
3. McClean, K.H., Winson, M.K., Fish, L., *et al. Microbiology* **143 (Pt 12)**, 3703-3711 (1997).
4. Riedel, K., Hentzer, M., Geisenberger, O., *et al. Microbiology* **147 (Pt 12)**, 3249-3262 (2001).
5. Winson, M.K., Camara, M., Latifi, A., *et al. Proc. Natl. Acad. Sci. USA* **92(20)**, 9427-9431 (1995).

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