

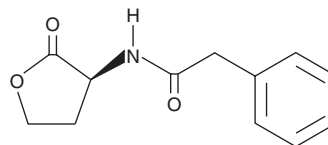
PRODUCT INFORMATION



N-phenylacetyl-L-Homoserine lactone

Item No. 9001737

CAS Registry No.: 55154-48-8
Formal Name: N-[(3S)-tetrahydro-2-oxo-3-furanyl]-benzeneacetamide
Synonyms: C8-HSL, N-phenylacetyl-L-HSL
MF: C₁₂H₁₂NO₃
FW: 219.2
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-phenylacetyl-L-homoserine lactone (C8-HSL) is supplied as a crystalline solid. A stock solution may be made by dissolving the C8-HSL in the solvent of choice. C8-HSL is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of C8-HSL in these solvents is approximately 30 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.

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 C8-HSL can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of C8-HSL in PBS, pH 7.2, is approximately 0.1 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.¹ This regulatory process manifests itself with a variety of phenotypes including biofilm formation and virulence factor production.² Coordinated gene expression is achieved by the production, release, and detection of small diffusible signal molecules called autoinducers. Autoinducers containing a phenylacetanoyl group in the acyl chain display a wide range of inhibitory and activating effects on various R protein transcriptional regulators.³⁻⁵ N-phenylacetyl-L-Homoserine lactone is a small diffusible signaling molecule involved in quorum sensing in the model symbiont *V. fischeri* and the pathogens *A. tumefaciens* and *P. aeruginosa*.^{5,6} It has been reported to antagonize TraR signaling in *A. tumefaciens*, LasR signaling in *E. coli*, and LuxR signaling in *V. fischeri*.⁴

References

1. González, J.E. and Keshavan, N.D. *Microbiol. Mol. Biol. Rev.* **70(4)**, 859-875 (2006).
2. Gould, T.A., Herman, J., Krank, J., et al. *J. Bacteriol.* **188(2)**, 773-783 (2006).
3. Geske, G.D., O'Neill, J.C., and Blackwell, H.E. *ACS Chem. Biol.* **2(5)**, 315-319 (2007).
4. Geske, G.D., O'Neill, J.C., Miller, D.M., et al. *ChemBioChem* **9(3)**, 389-400 (2008).
5. Geske, G.D., O'Neill, J.C., Miller, D.M., et al. *J. Am. Chem. Soc.* **129**, 13613-13625 (2007).
6. Geske, G.D., Wezeman, R.J., Siegel, A.P., et al. *J. Am. Chem. Soc.* **127(37)**, 12762-12763 (2005).

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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