Product Information

N-3-oxo-dodecanoyl-L-Homoserine lactone
Item No. 10007895

CAS Registry No.: 168982-69-2
Formal Name: 3-oxo-N-[(3S)-tetrahydro-2-oxo-3-furanyl]-dodecanamide
Synonym: 3-oxo-C12-HSL
MF: C16H27NO4
FW: 297.4
Purity: ≥98%
Stability: 2 years at -20°C
Supplied as: A crystalline solid
UV/Vis: λ_max 202, 250 nm

Laboratory Procedures
For long term storage, we suggest that N-3-oxo-dodecanoyl-L-homoserine lactone (3-oxo-C12-HSL) be stored as supplied at -20°C. It should be stable for at least one year.

3-oxo-C12-HSL is supplied as a crystalline solid. A stock solution may be made by dissolving the 3-oxo-C12-HSL in an organic solvent purged with an inert gas. 3-oxo-C12-HSL is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 3-oxo-C12-HSL in these solvents is approximately 20 mg/ml. While 3-oxo-C12-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.

3-oxo-C12-HSL is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 3-oxo-C12-HSL should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 3-oxo-C12-HSL has a solubility of approximately 0.2 mg/ml in a 1:3 solution of ethanol: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. 1 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. 2 3-oxo-C12-HSL is one of the AHLs frequently identified in extracts of respiratory secretions from cystic fibrosis patients infected with P. aeruginosa and/or strains of the B. cepacia complex. 3 3-oxo-C12-HSL activates the transcription factors NF-kB and AP-2 to induce interleukin-8 production in human lung fibroblasts and epithelial cells, possibly contributing to the neutrophil infiltration and inflammation found in P. aeruginosa infections. 3

References

Related Products
For a list of related products please visit: www.caymanchem.com/catalog/10007895

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 with your order to your institution.

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