Product Information

N-3-oxo-octanoyl-L-Homoserine lactone
Item No. 10011206

CAS Registry No.: 147795-39-9
Formal Name: 3-oxo-N-[(3S)-tetrahydro-2-oxo-3-furanyl]-octanamide
Synonyms: 3-oxo-C8-HSL, N-β-oxo-octanoyl-L-
Homoserine lactone
MF: C12H19NO4
FW: 241.3
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid

Laboratory Procedures
For long term storage, we suggest that N-3-oxo-octanoyl-L-homoserine lactone (3-oxo-C8-HSL) be stored as supplied at -20°C. It should be stable for at least two years.

3-oxo-C8-HSL is supplied as a crystalline solid. A stock solution may be made by dissolving the 3-oxo-C8-HSL in an organic solvent purged with an inert gas. 3-oxo-C8-HSL is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 3-oxo-C8-HSL in these solvents is approximately 30 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.

If aqueous stock solutions are required for biological experiments, they can best be prepared by diluting the organic solvent into aqueous buffers or isotonic saline. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. 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 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. The N-acylated homoserine lactones (AHLs) comprise one such class of autoinducers, each of which generally consists of a fatty acid coupled with HSL. Regulation of bacterial quorum sensing signaling systems to inhibit pathogenesis represents a new approach to antimicrobial therapy in the treatment of infectious diseases.3 AHLs vary in acyl group length (C4-C18), in the substitution of C3 (hydrogen, hydroxyl, or oxo group), and in the presence or absence of one or more carbon-carbon double bonds in the fatty acid chain. These differences confer signal specificity through the affinity of transcriptional regulators of the LuxR family.4 In the gram-negative bacterium A. tumefaciens, 3-oxo-C8-HSL promotes the expression of the transcriptional activator (and LuxR homolog) TraR.5

References

Related Products
For a list of related products please visit: www.caymanchem.com/catalog/10011206

SAFETY DATA
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