N-3-hydroxyoctanoyl-L-Homoserine lactone
Item No. 9001150

CAS Registry No.: 192883-14-0
Formal Name: 3-hydroxy-N-[(3S)-tetrahydro-2-oxo-3-furanyl]-octanamide
Synonym: OH-C8-HSL
MF: C_{12}H_{21}NO_4
FW: 243.3
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid

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

N-3-hydroxyoctanoyl-L-Homoserine lactone is supplied as a crystalline solid. A stock solution may be made by dissolving the N-3-hydroxyoctanoyl-L-homoserine lactone in the solvent of choice. N-3-hydroxyoctanoyl-L-Homoserine lactone is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of N-3-hydroxyoctanoyl-L-homoserine lactone in these solvents is approximately 30 mg/ml. While C_{9}-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.

N-3-hydroxyoctanoyl-L-Homoserine lactone is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure 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. Different quorum sensing molecules are produced at different times in bacterial population growth and have distinct cellular effects mediated through changes in gene expression.\textsuperscript{1,2} N-3-hydroxyoctanoyl-L-Homoserine lactone is a small diffusible signaling molecule secreted by various bacteria.\textsuperscript{3,4} This lactone can have activating or suppressing effects on gene expression and biofilm formation, respectively.\textsuperscript{5,6} N-3-hydroxyoctanoyl-L-Homoserine lactone is produced \textit{via} lactonolysis from 3-oxooctanoyl-homoserine lactone, altering quorum sensing or contributing to quorum quenching.\textsuperscript{7}

References

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