N-butryl-L-Homoserine lactone
Item No. 10007898

CAS Registry No.: 67605-85-0
Formal Name: N-[(3S)-tetrahydro-2-oxo-3-furanyl]-butanamide
Synonym: C4-HSL
MF: C9H13NO3
FW: 171.2
Purity: ≥95%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid

Laboratory Procedures
For long term storage, we suggest that N-butryl-L-homoserine lactone (C4-HSL) be stored as supplied at -20°C. It should be stable for at least two years.

C4-HSL is supplied as a crystalline solid. A stock solution may be made by dissolving the C4-HSL in organic solvents such as DMSO and dimethyl formamide. The solubility of C4-HSL in these solvents is approximately 30 mg/ml. While C4-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 C4-HSL can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of C4-HSL in PBS, pH 7.2, is approximately 10 mg/ml. 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. 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. C4-HSL is a small diffusible signaling molecule involved in quorum sensing, controlling gene expression, and cellular metabolism. The diverse applications of this molecule include regulation of virulence in general, infection prevention, and formation of biofilms.

References

Related Products
For a list of related products please visit: www.caymanchem.com/catalog/10007898

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
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