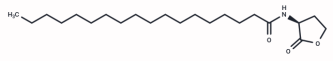
# N-octadecanoyl-L-Homoserine lactone

Cat. No.: **SN-M-LM743**

## Chemical Properties

| | |
|---|---|
| **Product Name** | N-octadecanoyl-L-Homoserine lactone |
| **Full Name** | N-[(3S)-2-oxooxolan-3-yl]octadecanamide |
| **Cat. No.** | SN-M-LM743 |
| **CAS No.** | 479050-96-9 |
| **Molecular Formula** | C22H41NO3 |
| **Molecular Weight** | 367.57 |
| **Storage** | Powder: -20°C for 3 years \| In solvent: -80°C for 1 year |
| **Shipping** | Shipping with blue ice/Shipping at ambient temperature. |
| **Solubility** | Chloroform: 0.5 mg/mL (1.36 mM), Sonication is recommended. |
| **Purity** | 98+% |

## Structure



## Biological Description

Quorum sensing is a regulatory system used by bacteria for controlling gene expression in response to increasing cell density. This regulatory process manifests itself with a variety of phenotypes including biofilm formation and virulence factor production. 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 homoserine lactone (HSL). Regulation of bacterial quorum sensing signaling systems to inhibit pathogenesis represents a new approach to antimicrobial therapy in the treatment of infectious diseases. 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. C18-HSL is one of four lipophilic, long acyl side-chain bearing AHLs produced by the LuxI AHL synthase homolog SinI involved in quorum sensing signaling in strains of S. meliloti, a nitrogen-fixing bacterial symbiont of the legume M. sativa. C18-HSL and other hydrophobic AHLs tend to localize in relatively lipophilic cellular environments of bacteria and cannot diffuse freely through the cell membrane. The long-chain N-acylhomoserine lactones may be exported from cells by efflux pumps or may be transported between communicating cells by way of extracellular outer membrane vesicles.

## Related Products / Keywords

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This product is a research reagent and must not be used for clinical validation or human therapeutic use.