

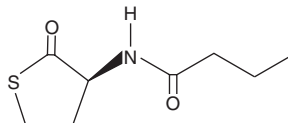
# PRODUCT INFORMATION



## N-butyryl-L-Homocysteine thiolactone

Item No. 10011204

**CAS Registry No.:** 202284-85-3  
**Formal Name:** N-[(3S)-tetrahydro-2-oxo-3-thienyl]-butanamide  
**MF:** C<sub>8</sub>H<sub>13</sub>NO<sub>2</sub>S  
**FW:** 187.3  
**Purity:** ≥95%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

N-butyryl-L-Homocysteine thiolactone is supplied as a crystalline solid. A stock solution may be made by dissolving the N-butyryl-L-homocysteine thiolactone in the solvent of choice, which should be purged with an inert gas. N-butyryl-L-Homocysteine thiolactone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of N-butyryl-L-homocysteine thiolactone in these solvents is approximately 25, 30, and 50 mg/ml, respectively.

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 N-butyryl-L-homocysteine thiolactone can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of N-butyryl-L-homocysteine thiolactone in PBS, pH 7.2, is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

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. N-butyryl-L-Homocysteine thiolactone is an analog of N-butyryl-L-homoserine lactone, the small diffusible signaling molecule involved in quorum sensing, thereby controlling gene expression and cellular metabolism.<sup>1</sup> N-butyryl-L-Homocysteine thiolactone induces violacein expression in *C. violaceum* mutants usually not able to produce AHLs.<sup>1,2</sup>

### References

- Ikeda, T., Kajiyama, K., Kita, T., *et al.* The synthesis of optically pure enantiomers of N-acyl-homoserine lactone autoinducers and their analogues. *Chemistry Letters* 314-315 (2001).
- McClellan, K.H., Winson, M.K., Fish, L., *et al.* Quorum-sensing and *Chromobacterium violaceum*: Exploitation of violacein production and inhibition for the detection of N-acylhomoserine lactones. *Microbiology* **143**, 3703-3711 (1997).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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