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## Product Data Sheet

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Product Name: 5'-deoxy Thymidine

Cat. No.: GC10731

### Chemical Properties

Cas. No. 3458-14-8

Chemical Name 5'-deoxy-thymidine

SMILES CC1=CN(C(NC1=O)=O)[C@H]2C[C@H](O)[C@@H](C)O2

Formula  $C_{10}H_{14}N_2O_4$  M.Wt 226.2

Solubility  $\leq 10\text{mg/ml}$  in DMSO;  $16\text{mg/ml}$  in dimethyl formamide Storage Store at  $-20^\circ\text{C}$

General tips For obtaining a higher solubility, please warm the tube at  $37^\circ\text{C}$  and shake it in the ultrasonic bath for a while. Stock solution can be stored below  $-20^\circ\text{C}$  for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure

### Background

5'-Deoxy Thymidine has been used as a research tool for antiviral and anticancer studies. 5'-Deoxy Thymidine can be used to study the entry mechanism into human erythrocytes in comparison with other deoxythymidines. Deoxythymidine, also named as thymidine, is the DNA nucleoside T. Deoxythymidine can pair with deoxyadenosine (A) in double-stranded DNA. 5'-deoxy Thymidine is a form of thymidine which had the hydroxyl group at the 5' position replaced with hydrogen [1]. 5'-deoxy Thymidine ( $50\ \mu\text{g/mL}$ ) was effective against *Bacillus subtilis* and *Staphylococcus aureus* [1]. The MBC of 5'-deoxy Thymidine was  $50\ \mu\text{g/mL}$ . 5'-deoxy Thymidine has been used as an antibacterial agent in medical situations [1].

Thymidine has been phosphorylated at the hydroxyl group on carbon 5 of the ribose moiety before polymerization into DNA. 5'-Deoxy Thymidine cannot be phosphorylated and used by DNA polymerase in the synthesis of DNA. In human erythrocytes, 5'-Deoxy Thymidine was readily and nonconcentratively uptaken by metabolism, and could be

**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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partially inhibited by nucleosides or inhibitors of nucleoside transport at micromolar concentrations [2].

### References:

- [1] Hatano A, Nishimura M, Souta I. Impact of unnatural nucleosides on the control of microbial growth[J]. Biocontrol science, 2009, 14(2): 55-60.
- [2] Domin B A, Mahony W B, Koszalka G W, et al. Membrane permeation characteristics of 5'-modified thymidine analogs[J]. Molecular pharmacology, 1992, 41(5): 950-956.

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