

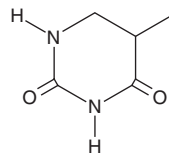
PRODUCT INFORMATION



Dihydrothymine

Item No. 37187

CAS Registry No.: 696-04-8
Formal Name: dihydro-5-methyl-2,4(1H,3H)-pyrimidinedione
Synonyms: 5,6-Dihydro-5-methyluracil, 5,6-Dihydrothymine, NSC 44131, 5-Methyl-5,6-dihydrouracil
MF: C₅H₈N₂O₂
FW: 128.1
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Dihydrothymine is supplied as a solid. A stock solution may be made by dissolving the dihydrothymine in the solvent of choice, which should be purged with an inert gas. Dihydrothymine is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of dihydrothymine in DMSO is approximately 10 mg/ml. Dihydrothymine is slightly soluble in DMF.

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 dihydrothymine can be prepared by directly dissolving the solid in aqueous buffers. The solubility of dihydrothymine in PBS (pH 7.2) is approximately 0.25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Dihydrothymine is a metabolite of the pyrimidine nucleobase thymine.¹ It is formed from thymine by dihydropyrimidine dehydrogenase (DPD). Dihydrothymine can also be produced from thymine by UV radiation.² Levels of dihydrothymine are elevated during the epithelial-to-mesenchymal transition (EMT) in human mammary epithelial cells expressing Twist.³

References

1. Lu, Z.-H., Zhang, R., and Diasio, R.B. Purification and characterization of dihydropyrimidine dehydrogenase from human liver. *J. Biol. Chem.* **267**(24), 17102-17109 (1992).
2. Yamane, T., Wyluda, B.J., and Shulman, R.G. Dihydrothymine from UV-irradiated DNA. *Proc. Natl. Acad. Sci. USA* **58**(2), 439-442 (1967).
3. Shaul, Y.D., Freinkman, E., Comb, W.C., *et al.* Dihydropyrimidine accumulation is required for the epithelial-mesenchymal transition. *Cell* **158**(5), 1094-1109 (2014).

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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM