

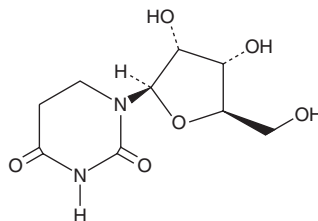
PRODUCT INFORMATION



5,6-Dihydrouridine

Item No. 32523

CAS Registry No.: 5627-05-4
Synonym: DHU
MF: $C_9H_{14}N_2O_6$
FW: 246.2
Purity: $\geq 95\%$
Supplied as: A crystalline solid
Storage: $-20^\circ C$
Stability: ≥ 4 years



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

Laboratory Procedures

5,6-Dihydrouridine is supplied as a crystalline solid. A stock solution may be made by dissolving the 5,6-dihydrouridine in the solvent of choice, which should be purged with an inert gas. 5,6-Dihydrouridine is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of 5,6-dihydrouridine in these solvents is 10 and 16 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 5,6-dihydrouridine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 5,6-dihydrouridine in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

5,6-Dihydrouridine is a pyrimidine nucleoside and derivative of uridine (Item No. 20300). It is present in, and provides conformational flexibility to, tRNA from bacteria, eukaryotes, and some archaea.^{1,2} 5,6-Dihydrouridine inhibits *E. coli* cytidine deaminase in a cell-free assay ($K_i = 3.4 \mu M$).⁴ Serum levels of 5,6-dihydrouridine are increased in patients with prostate cancer and positively correlated with lethality.³

References

1. Kasprzak, J.M., Czerwoniec, A., and Bujnicki, J.M. Molecular evolution of dihydrouridine synthases. *BMC Bioinformatics* **13**, 153 (2012).
2. Dalluge, J.J., Hashizume, T., Sopchik, A.E., *et al.* Conformational flexibility in RNA: The role of dihydrouridine. *Nucleic Acids Res.* **24(6)**, 1073-1079 (1996).
3. Huang, J., Mondul, A.M., Weinstein, S.J., *et al.* Prospective serum metabolomic profiling of lethal prostate cancer. *Int. J. Cancer* **145(12)**, 3231-3243 (2019).
4. Cohen, R.M. and Woldender, R. Cytidine deaminase from *Escherichia coli*. Purification, properties and inhibition by the potential transition state analog 3,4,5,6-tetrahydrouridine. *J. Biol. Chem.* **246(24)**, 7561-7665 (1971).

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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