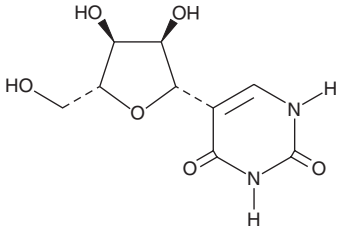
PRODUCT INFORMATION

β-Pseudouridine

Item No. 23383

CAS Registry No.:	1445-07-4
Formal Name:	5-β-D-ribofuranosyl-2,4(1H,3H)-pyrimidinedione
Synonyms:	NSC 162405, 5-Ribosyluracil
MF:	$C_9H_{12}N_2O_6$
FW:	244.2
Purity:	≥95%
UV/Vis.:	λ_{max}: 208, 265 nm
Supplied as:	A crystalline 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

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

Description

β-Pseudouridine is the C-5 glycoside isomer of the nucleoside uridine (Item No. 20300).[1] It is formed when uridine in RNA undergoes site-specific isomerization by a pseudouridine synthase enzyme. β-Pseudouridine is found in tRNAs from bacteria, archaea, and eukaryotes.[2] *In vitro*, it reduces the number of X-ray-induced chromosomal aberrations in human lymphocytes isolated from whole blood in a dose-dependent manner.[3]

References

1. Hamma, T. and Ferré-D'Amaré, A.R. Pseudouridine synthases. *Chem. Biol.* **13(11)**, 1125-1135 (2006).
2. Lorenz, C., Lünse, C.E., and Mörl, M. tRNA modifications: Impact on structure and thermal adaptation. *Biomolecules* **7(2)**, E35 (2017).
3. Monobe, M., Arimoto-Kobayashi, S., and Ando, K. β-pseudouridine, a beer component, reduces radiation-induced chromosome aberrations in human lymphocytes. *Mutat. Res.* **538(1-2)**, 93-99 (2003).

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