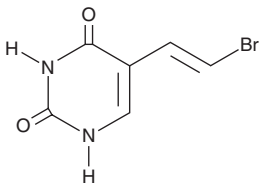
PRODUCT INFORMATION

(E)-5-(2-Bromovinyl)uracil

Item No. 21030

CAS Registry No.: 69304-49-0
Formal Name: 5-[(1E)-2-bromoethenyl]-2,4(1H,3H)-pyrimidinedione
Synonym: BVU
MF: $C_6H_5BrN_2O_2$
FW: 217.0
Purity: ≥95%
UV/Vis.: λ_{max}: 250, 290 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

(E)-5-(2-Bromovinyl)uracil (BVU) is supplied as a crystalline solid. A stock solution may be made by dissolving the BVU in the solvent of choice, which should be purged with an inert gas. BVU is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of BVU in these solvents is approximately 0.8, 53, and 60 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 BVU can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of BVU in PBS, pH 7.2, is approximately 8 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

BVU is a pyrimidine base and an inactive metabolite of the antiviral agents sorivudine and (E)-5-(2-bromovinyl)-2'-deoxyuridine (BVDU) that may be regenerated to BVDU *in vivo*.[1-3] BVU irreversibly inactivates dihydropyrimidine dehydrogenase (DPD) in an NADPH-dependent manner.[1,4] It enhances the efficacy of the chemotherapeutic agent and DPD substrate 5-fluorouracil (5-FU; Item No. 14416) in a P388 murine leukemia model when administered at a dose of 200 µmol/kg, increasing survival time.[4]

References

1. Ogura, K., Nishiyama, T., Takubo, H., *et al.* Suicidal inactivation of human dihydropyrimidine dehydrogenase by (E)-5-(2-bromovinyl)uracil derived from the antiviral, sorivudine. *Cancer Lett.* **122(1-2)**, 107-113 (1998).
2. Desgranges, C., Razaka, G., Drouiller, F., *et al.* Regeneration of the antiviral drug (E)-5-(2-bromovinyl)-2′-deoxyuridine *in vivo*. *Nucleic Acids Res.* **12(4)**, 2081-2110 (1984).
3. De Clercq, E., Desgranges, C., Herdewijn, P., *et al.* Synthesis and antiviral activity of (E)-5-(2-bromovinyl) uracil and (E)-5-(2-bromovinyl)uridine. *J. Med. Chem.* **29(2)**, 213-217 (1986).
4. Desgranges, C., Razaka, G., De Clercq, E., *et al.* Effect of (E)-5-(2-bromovinyl)uracil on the catabolism and antitumor activity of 5-fluorouracil in rats and leukemic mice. *Cancer Res.* **46(3)**, 1094-1101 (1986).

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