Product data sheet



| MedKoo Cat#: 100103 | | | | |
|---|--|--|--|--|
| Name: Brivudine | | | | |
| CAS#: 69304-47-8 | | | | |
| Chemical Formula: C ₁₁ H ₁₃ BrN ₂ O ₅ | | | | |
| Exact Mass: 332.0008 | | | | |
| Molecular Weight: 333.13 | | | | |
| Product supplied as: | Powder | | | |
| Purity (by HPLC): | $\geq 98\%$ | | | |
| Shipping conditions | Ambient temperature | | | |
| Storage conditions: | Powder: -20°C 3 years; 4°C 2 years. | | | |
| - | In solvent: -80°C 3 months; -20°C 2 weeks. | | | |



1. Product description:

Brivudine, also known as bromovinyl-deoxyuridine, is a uridine derivative and nucleoside analog with pro-apoptotic and chemosensitizing properties. In vitro, bromovinyl-deoxyuridine (BVDU) has been shown to downregulate the multifunctional DNA repair enzyme APEX nuclease 1, resulting in the inhibition of DNA repair and the induction of apoptosis. In addition, this agent may inhibit the expression of STAT3 (signal transducer and activator of transcription 3), which may result in the downregulation of vascular endothelial growth factor (VEGF). BVDU has also been found to inhibit the upregulation of chemoresistance genes (Mdr1 and DHFR) during chemotherapy. Overall, the gene expression changes associated with BVDU treatment result in the decrease or prevention of chemoresistance. In addition, this agent has been shown to enhance the cytolytic activity of NK-92 natural killer cells towards a pancreatic cancer cell line in vitro.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

| 5. Solubility data | | | | |
|--------------------|-----------------|--------------|--|--|
| Solvent | Max Conc. mg/mL | Max Conc. mM | | |
| DMSO | 142.0 | 426.26 | | |
| DMF | 30.0 | 90.05 | | |
| Ethanol | 10.0 | 30.02 | | |
| PBS (pH 7.2) | 0.50 | 1.50 | | |

4. Stock solution preparation table:

| Concentration / Solvent Volume / Mass | 1 mg | 5 mg | 10 mg |
|---------------------------------------|---------|----------|----------|
| 1 mM | 3.00 mL | 15.01 mL | 30.02 mL |
| 5 mM | 0.60 mL | 3.00 mL | 6.00 mL |
| 10 mM | 0.30 mL | 1.50 mL | 3.00 mL |
| 50 mM | 0.06 mL | 0.30 mL | 0.60 mL |

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Heinrich JC, Tuukkanen A, Schroeder M, Fahrig T, Fahrig R. RP101 (brivudine) binds to heat shock protein HSP27 (HSPB1) and enhances survival in animals and pancreatic cancer patients. J Cancer Res Clin Oncol. 2011 Sep;137(9):1349-61. doi: 10.1007/s00432-011-1005-1. Epub 2011 Jul 22. PMID: 21833720.

In vivo study

1. Heinrich JC, Tuukkanen A, Schroeder M, Fahrig T, Fahrig R. RP101 (brivudine) binds to heat shock protein HSP27 (HSPB1) and enhances survival in animals and pancreatic cancer patients. J Cancer Res Clin Oncol. 2011 Sep;137(9):1349-61. doi: 10.1007/s00432-011-1005-1. Epub 2011 Jul 22. PMID: 21833720.

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7. Bioactivity

Biological target: Brivudine is a thymidine analogue with antiviral activity.

In vitro activity

RP101 binds in vitro to the heat shock protein HSPB1 and inhibits interaction with its binding partners. As a result, more activated CASP9 was detected in RP101-treated cancer cells.

Reference: J Cancer Res Clin Oncol. 2011 Sep;137(9):1349-61. https://link.springer.com/article/10.1007%2Fs00432-011-1005-1

In vivo activity

RP101 was tested as an anti-cancer drug in a rat model, and it was found that it improved chemotherapy.

Reference: J Cancer Res Clin Oncol. 2011 Sep;137(9):1349-61. https://link.springer.com/article/10.1007%2Fs00432-011-1005-1

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.