Product Datasheet

Technical Data

Formula	CNa_3O_5P		
Molecular Weight	191.95	**CAS No.**	63585-09-1
Solubility (25°C)*	In vitro	Water	19 mg/mL (98.98 mM)
		DMSO	Insoluble
		Ethanol	Insoluble

* <1 mg/ml means slightly soluble or insoluble.
* Please note that Capsid Bio tests the solubility of all compounds in-house, and the actual solubility may differ slightly from published values. This is normal and is due to slight batch-to-batch variations.
* Room temperature shipping (Stability testing shows this product can be shipped at 2-8°C for storage purposes.)

Preparing Stock Solutions

Concentration \ Volume / Mass	1 mg	5 mg	10 mg
1 mM	5.2097 mL	26.0485 mL	52.0969 mL
5 mM	1.0419 mL	5.2097 mL	10.4194 mL
10 mM	0.5210 mL	2.6048 mL	5.2097 mL
50 mM	0.1042 mL	0.5210 mL	1.0419 mL

Biological Activity

Description	Foscarnet Sodium (Phosphonoformate) inhibits viral RNA polymerases, reverse transcriptase, and DNA polymerases through noncompetitive inhibition with dNTPs.
Targets	RNA polymerase [1] | reverse transcriptase [1] | DNA polymerase [1]
In vitro	Foscarnet Sodium is able to penetrate into cells and inhibit viral replication by inhibiting viral DNA synthesis. This compound (300 μM) displays a more than 95% inhibition on HTLV-III reverse transcriptase activity in H9 cells infected with HTLV-III. [1] It has a low cellular toxicity, but shows an inhibition of cell proliferation at high concentrations, which is reversed after drug removal. Incubation 0.5-1 mM of this chemical with HeLa cells or primary human lung fibroblast for 24-48 hr inhibited 50% DNA synthesis and/or cell proliferation. [1] This compound is able to bind with the heparin-binding domain of FGF2 and inhibits FGF2 induced cell proliferation. It (25 μM) treating HUVEC cells for 48 hr reduced FGF2-induced cellular proliferation by 20%. This chemical (0.5-1 mM) reduced the 24h proliferation rate of CAL-62 cell, a Human thyroid anaplastic carcinoma cell line which expresses FGF2, to nearly 80%. [2]
In vivo	Foscarnet Sodium display an efficient therapy effect on animal with virus diseases, such as cutaneous infection, herpes keratitis, genital infection, or systemic and interacerebral infection. For example, this compound (100 mM) applied at initiated 48 h post inoculation with twice daily applications of 30 μL for 4 days, displays a more than 70% reduction in cumulative score after inoculation with HSV-1 strain C42. This chemical (20 mg/kg) given as an aerosol to mice infected with murine CMV caused a reduction of 60% in lung titers. [1]

Protocol (from reference)

Kinase Assay:[3]

- **Reverse transcriptase assays**

  Reverse transcriptase assays are carried out in a reaction mixture (50 μL) containing 50 mM Tris-HCl (pH 7.5), 5 mM DTT, 100 mM potassium chloride, 0.01% Triton X-100 or NP40, 10 μg/ml $(dT)_{15}.(A)_n$ as template primer and [^{3}H] deoxythymidine triphospahate. The reaction mixture is incubated for 1 hr at 37 ℃ and stopped by the addition of 50 μg of yeast tRNA and 2 mL of 10% solution of trichloroacetic acid containing 1 mM sodium pyrophosphate. The samples are filtered on filters (0.45 μm), washed first with 5% TCA solution for 5 times and then with 2 ml of 70% ethanol. The filters are dried, scintillation fluid is added and the radioactivity counted in a counter.

Cell Assay:[2]

- **Cell lines**

  Human thyroid anaplastic carcinoma cell line, CAL-62 cell
- **Concentrations**

  ~1.5 mM
- **Incubation Time**

  48 hours
- **Method**

  CAL-62 cells are placed on 96 well plates at 8×10^3 cells/well in 100 μL DMEM for 24 h. Then medium is replaced by fresh DMEM with or without this compound. After 48 h of incubation, 20 μL of CellTiter 96AQ solution is added to the cells and incubated for 2-4 h. The quantity of formazan product as measured by the absorbance at 492 nm.

Animal Study:[4]

- **Animal Models**

  Guinea-pigs with cutaneous HSV-1 infections on the backs
- **Dosages**

  5 mM
- **Administration**

  A total of 14 days topical applications of 30 μL at 12 h intervals, starting 48 hr after virus inoculation.

References

https://pubmed.ncbi.nlm.nih.gov/2543994/ https://pubmed.ncbi.nlm.nih.gov/23228448/ https://pubmed.ncbi.nlm.nih.gov/2415134/

+ Expand

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SHIPPING & STORAGE

Capsid Bio products are transported at room temperature. If you receive the product at room temperature, please rest assured, the Capsid Bio Quality Inspection Department has conducted experiments to verify that the normal temperature placement of one month will not affect the biological activity of powder products. After collecting, please store the product according to the requirements described in the datasheet. Most Capsid Bio products are stable under the recommended conditions.

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