# PSI-7409

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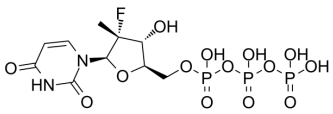
|---|---|
| **Cat. No.:** | HY-15745 |
| **CAS No.:** | 1015073-42-3 |
| **Molecular Formula:** | $C_{10}H_{16}FN_2O_{14}P_3$ |
| **Molecular Weight:** | 500.16 |
| **Target:** | HCV |
| **Pathway:** | Anti-infection |
| **Storage:** | Powder -20°C 3 years<br>In solvent -80°C 6 months<br>-20°C 1 month |



## SOLVENT & SOLUBILITY

**In Vitro**

$H_2O$ : 50 mg/mL (99.97 mM; Need ultrasonic)
DMF : < 1 mg/mL (insoluble)
DMSO : < 1 mg/mL (insoluble or slightly soluble)

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 1.9994 mL | 9.9968 mL | 19.9936 mL |
| 5 mM | 0.3999 mL | 1.9994 mL | 3.9987 mL |
| 10 mM | 0.1999 mL | 0.9997 mL | 1.9994 mL |

Please refer to the solubility information to select the appropriate solvent.

## BIOLOGICAL ACTIVITY

**Description**

PSI-7409 is the active 5'-triphosphate metabolite of Sofosbuvir (PSI-7977). Sofosbuvir (PSI-7977) is a selective and highly active nucleotide analog inhibitor of HCV.

**In Vitro**

PSI-7409 inhibits the enzymatic activities of these NS5BΔ21 polymerases in a dose-dependent manner. The $IC_{50}$s for PSI-7409 against GT 1b, 2a, 3a, and 4a NS5B polymerases are 1.6 μM, 2.8 μM, 0.7 μM, and 2.6 μM, respectively. PSI-7409 is a weak inhibitor of DNA Pol α ($IC_{50}$=550 μM). DNA Pol β and γ are not inhibited by 1 mM PSI-7409. A significant amount of RNA product is made in the presence of 500 μM PSI-7409, about 85%[1]. In clone A cells, the levels of PSI-7409 gradually increases to a maximum concentration of about 25 μm over a period of 48 h. PSI-7409 forms at a much faster rate in primary human hepatocytes, achieving a maximum intracellular concentration of -100 μM at 4 h and remains at that concentration for 48 h [2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Cell. 2022 Nov 10;185(23):4347-4360.e17.
- Asian J Pharm Sci. 21 October 2021.
- Microbiol Spectr. 2022 Aug 18;e0272922.
- Antiviral Res. 2020 Mar;175:104708.
- J Virol Methods. 2021 Sep 14;298:114283.

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## REFERENCES

[1]. Lam AM, et al. PSI-7851, a pronucleotide of beta-D-2'-deoxy-2'-fluoro-2'-C-methyluridine monophosphate, is a potent and pan-genotype inhibitor of hepatitis C virus replication. Antimicrob Agents Chemother. 2010 Aug;54(8):3187-96.

[2]. Murakami E, et al. Mechanism of activation of PSI-7851 and its diastereoisomer PSI-7977.



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