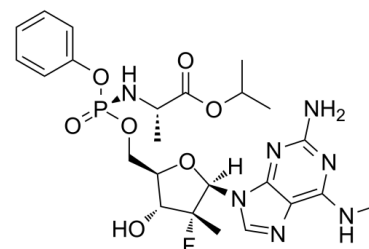


Data Sheet

Product Name:	Bemnifosbuvir
Cat. No.:	CS-0146079
CAS No.:	1998705-64-8
Molecular Formula:	C ₂₄ H ₃₃ FN ₇ O ₇ P
Molecular Weight:	581.53
Target:	HCV; SARS-CoV
Pathway:	Anti-infection
Solubility:	DMSO : 100 mg/mL (171.96 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Bemnifosbuvir (AT-511) is a potent and orally active **HCV viral replication** inhibitor. Bemnifosbuvir is highly effective in the control of **SARS-CoV-2 (COVID-19)** infection in vitro (**EC₉₀**=0.47 μM). Bemnifosbuvir has pangenotypic antiviral activity^{[1][2][3]}. IC₅₀ & Target: EC₅₀: 5-28 nM (HCV)^[1]

EC₉₀: 0.47 μM (SARS-CoV-2)^[2] **In Vitro:** Bemnifosbuvir has pan-genotypic antiviral activities that inhibits HCV genotype 1a (HCV GT1a), HCV GT1b, HCV GT2a, HCV GT3a, HCV GT4a, and HCV GT5a replication with EC₅₀ values of 12.8 nM, 12.5 nM, 9.2 nM, 10.3 nM, 14.7 nM, and 28.5 nM, respectively^[1].

In normal human airway epithelial cells, the concentration of Bemnifosbuvir required to inhibit replication of SARS-CoV-2 by EC₉₀ is 0.47 μM, very similar to its EC₉₀ against HCoV-229E, HCoV-OC43 and SARS-CoV in Huh-7 cells^[2]. **In Vivo:** When given orally to rats (500 mg/kg) and monkeys (30 mg/kg, 100 mg/kg or 300 mg/kg), Bemnifosbuvir preferentially delivers high levels of AT-9010 in the liver in vivo^[1].

References:

[1]. Steven S Good, et al. Preclinical evaluation of AT-527, a novel guanosine nucleotide prodrug with potent, pan-genotypic activity against hepatitis C virus. PLoS One. 2020 Jan 8;15(1):e0227104.

[2]. Steven S Good, et al. AT-527, a double prodrug of a guanosine nucleotide analog, is a potent inhibitor of SARS-CoV-2 in vitro and a promising oral antiviral for treatment of COVID-19. Antimicrob Agents Chemother. 2021 Feb 8;AAC.02479-20.

[3]. Elina Berliba, et al. Safety, pharmacokinetics and antiviral activity of AT-527, a novel purine nucleotide prodrug, in HCV-infected subjects with and without cirrhosis. Antimicrob Agents Chemother. 2019 Sep 30;63(12):e01201-19.

CAIndexNames:

L-Alanine, N-[[P(S),2'R]-2-amino-2'-deoxy-2'-fluoro-N,2'-dimethyl-P-phenyl-5'-adenylyl]-, 1-methylethyl ester

SMILES:

C[C@@]1([C@](O[C@@H]([C@H]1O)CO[P@](OC2=CC=CC=C2)(N[C@@H](C)C(OC(C)C)=O)=O)([H])N3C4=NC(N)=NC(NC)=C4N=C3)F

Caution: Product has not been fully validated for medical applications. For research use only.

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