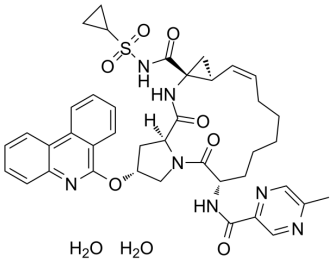
Paritaprevir dihydrate

Cat. No.:	HY-12594A
CAS No.:	1456607-71-8
Molecular Formula:	$C_{40}H_{47}N_7O_9S$
Molecular Weight:	801.91
Target:	HCV Protease; HCV; SARS-CoV
Pathway:	Anti-infection; Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Paritaprevir (ABT-450) dihydrate is a potent, orally active and antiviral non-structural protein 3/4A (NS3/4A) protease inhibitor with EC_{50}s of 1 and 0.21 nM against HCV 1a and 1b, respectively. Paritaprevir dihydrate is also a SARS-CoV $3CL^{pro}$ inhibitor with an IC_{50} of 1.31 μM. Paritaprevir dihydrate is metabolized primarily by cytochrome P450 (CYP) 3A. The plasma concentration and half-life of Paritaprevir dihydrate can be enhanced by Ritonavir (a CYP450 inhibitor)[1][2][3][4].
IC_{50} & Target	EC_{50}: 1 nM (HCV 1a), 0.21 nM (HCV 1b)[1] IC_{50}: 1.31 μM (SARS-CoV $3CL^{pro}$)[3]
In Vitro	Paritaprevir has in vitro antiviral activity against HCV GT1-4 and GT6 (EC_{50} range, 0.09 to 19 nM), with an EC_{50} of 0.09 nM against GT4a[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	The combination of Paritaprevir, Ritonavir, Ombitasvir (an NS5A protein inhibitor), and Dasabuvir (an NS5B non-nucleoside polymerase inhibitor) with or without RBV has been approved to treat HCV genotype 1 infections[1][4]. The acute toxicity of Paritaprevir is considered to be low. Single oral doses of ≤600 mg/kg in rats and ≤100 mg/kg in dogs produces no mortality and were well tolerated. However, since Paritaprevir is administered without ritonavir as a PK enhancer, the exposures are low, especially in male rats (rat 600 mg/kg, males: C_{max} 1.82 μg/mL, AUC_{0-24} 8.89 μg·h/mL; dog 100 mg/kg, mean: C_{max} 61.3 μg/mL, AUC_{0-24} 285 μg·h/mL). MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Signal Transduct Target Ther. 2021 May 29;6(1):212.
- Elife. 2020 Jun 9;9:e56469.
- J Gastroenterol. 2019 May;54(5):449-458.
- Antivir Res. 2019 Nov;171:104612.
- Antiviral Res. 2017 Mar;139:18-24.

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REFERENCES

[1]. Smith MA,et al. Profile of paritaprevir/ritonavir/ombitasvir plus dasabuvir in the treatment of chronic hepatitis C virus genotype 1 infection. Drug Des Devel Ther. 2015 Nov 13;9:6083-94.

[2]. Schnell G, et al. Hepatitis C Virus Genotype 4 Resistance and Subtype Demographic Characterization of Patients Treated with Ombitasvir plus Paritaprevir/ritonavir. Antimicrob Agents Chemother. 2015 Aug 17. pii: AAC.01229-15.

[3]. Qi Sun, et al. Bardoxolone and bardoxolone methyl, two Nrf2 activators in clinical trials, inhibit SARS-CoV-2 replication and its 3C-like protease. Signal Transduct Target Ther. 2021 May 29;6(1):212.

[4]. Menon RM, et al. Drug-drug interaction profile of the all-oral anti-hepatitis C virus regimen of paritaprevir/ritonavir, ombitasvir, and dasabuvir. J Hepatol. 2015 Jul;63(1):20-9.

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