Lomibuvir

Cat. No.: HY-75800

CAS No.: 1026785-55-6

Molecular Formula: $C_{25}H_{35}NO_4S$

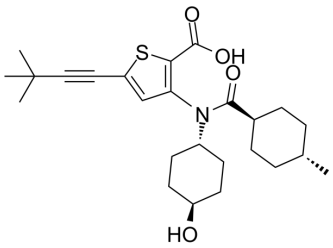
Molecular Weight: 445.61

Target: HCV; DNA/RNA Synthesis

Pathway: Anti-infection; Cell Cycle/DNA Damage

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (224.41 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.2441 mL	11.2205 mL	22.4409 mL
	5 mM	0.4488 mL	2.2441 mL	4.4882 mL
	10 mM	0.2244 mL	1.1220 mL	2.2441 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 2.5 mg/mL (5.61 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.61 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.61 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Lomibuvir (VX-222), a selective, non-nucleoside polymerase inhibitor, targets thumb pocket 2 of the HCV NS5B polymerase (RdRp) with a K_d of 17 nM. Lomibuvir inhibits the 1b/Con1 HCV subgenomic replicon with an EC_{50} of 5.2 nM. Lomibuvir preferentially inhibits elongative RNA synthesis rather than de novo-initiated RNA synthesis[1].

In Vitro

Lomibuvir (VX-222) inhibits WT HCV 1b/Con1 replicon with an EC_{50} of 5.2 nM. Lomibuvir inhibits M423T, L419M and I482L (mutant replicons) with EC_{50}s of 79.8, 563.1, 45.3 nM, respectively. Lomibuvir reduces de novo initiation slightly but also shows strong inhibition of primer extension. The IC_{50} of Lomibuvir for primer-extended RNA synthesis is 31 nM[1].

Lomibuvir is a non-nucleoside, allosteric inhibitor of the hepatitis C virus NS5B polymerase[2].

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

CUSTOMER VALIDATION

- Antiviral Res. 2019 Oct;170:104570.
- J Virol Methods. 2019 Aug;270:1-11.

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REFERENCES

[1]. Yi G, Deval J, et al. Biochemical study of the comparative inhibition of hepatitis C virus RNA polymerase by VX-222 and filibuvir. Antimicrob Agents Chemother. 2012;56(2):830-837.

[2]. Li P, Dorsch W, et al. Discovery of Novel Allosteric HCV NS5B Inhibitors. 2. Lactam-Containing Thiophene Carboxylates. ACS Med Chem Lett. 2017;8(2):251-255. Published 2017 Jan 31.

[3]. M. Rodriguez-Torres et al. SAFETY AND ANTIVIRAL ACTIVITY OF THE HCV NON-NUCLEOSIDE POLYMERASE INHIBITOR VX-222 IN TREATMENT-NAIVE GENOTYPE 1 HCV-INFECTED PATIENTS Journal of Hepatology Volume 52, Supplement 1 , Page S14, April 2010

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