Product Data Sheet

Chemical Properties

Product Name: Narlaprevir

Cas No.: 865466-24-6

M.Wt: 707.96

Formula: C36H61N5O7S

Synonyms: SCH 900518; SCH900518; SCH-900518

Chemical Name: (1R,2S,5S)-3-[(2S)-2-[[1-(tert-butylsulfonylmethyl)cyclohexyl]carbamoylamino]-3,3-dimethylbutanoyl]-N-[(3S)-1-(cyclopropylamino)-1,2-dioxoheptan-3-yl]-6,6-dimethyl-3-azabicyclo[3.1.0]hexane-2-carboxamide

Canonical SMILES: CCCCC(C(=O)C(=O)NC1CC1)NC(=O)C2C3C(C3(C(C)C)CN2C(=O)C(C(C)(C)C)NC(=O)NC4(CCCCC4)CS(=O)(=O)C(C(C)C)

Solubility: Soluble in DMSO

Storage: Store at -20°C

General tips: For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shopping Condition: Evaluation sample solution: ship with blue ice
All other available size: ship with RT, or blue ice upon request

Biological Activity

Targets: Proteases

Pathways: HCV Protease

Description:

Narlaprevir is a potent and second generation inhibitor of HCV NS3 protease with Ki value of 6
HCV infection is a global problem of public health. It can even cause liver cirrhosis and hepatocellular carcinoma. As an essential enzyme of HCV replication, NS3 serine protease is thought to be an attractive target for HCV infection treatment. Narlaprevir is one of the small inhibitors of NS3 protease. Unlike boceprevir, narlaprevir is a single isoform and shows improved potency. In the inhibiting process of NS3 protease, narlaprevir firstly binds the enzyme with noncovalent interactions and then binds the active-site Ser139 with a reversible covalent bond [1, 2 and 3].

In the in vitro assay, narlaprevir inhibited genotypes 1a, 1b, 2a and 3a NS3 proteases with Ki values of 0.7, 7, 3 and 7 nM, respectively. In the virus replicon-inhibition assay, narlaprevir showed significant antiviral efficacy with EC50 and EC90 values of 20 and 40 nM, respectively. Besides that, narlaprevir had no cytotoxicity for the host cells. Narlaprevir is also used as a combination therapy with pegylated interferon. The combination treatment of narlaprevir and interferon alfa-2b showed elevated activity in replicon inhibition than the monotherapy of narlaprevir alone [2].

Narlaprevir has improved pharmacokinetic profile of both AUC and bioavailability in animal trials. It showed AUC of 6.5 μM·h, 1.1 μM·h and 0.9 μM·h in rats, monkeys and dogs, respectively. The bioavailabilities of narlaprevir in the three kinds of animals are 46%, 46% and 29%, respectively [1].

Some drug resistant mutations have been identified in the selection with high concentrations of narlaprevir, such as A156T (EC50 value of 1 μM), T54A (EC50 value of 11 nM) and the double mutation (T54A and A156T). Narlaprevir was also found to have cross-resistance to the mutations, such as V170A, F43C and V36M (EC50 value of 8 nM), which are resistant against boceprevir [2, 3].

Reference:

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Short term storage of many products are stable in the short-term at temperatures that differ from that...
required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.