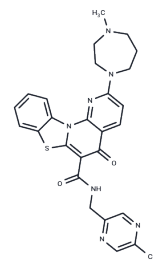


CX-5461

Chemical Properties

CAS No. : 1138549-36-6
Formula: C₂₇H₂₇N₇O₂S
Molecular Weight: 513.61
Appearance: no data available
Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year



Biological Description

Description	CX-5461, a selective inhibitor of rRNA synthesis, suppresses Pol I-driven transcription of rRNA.
Targets(IC50)	DNA/RNA Synthesis
In vitro	CX-5461 demonstrates the capacity to inhibit cell proliferation in various cell lines, notably HCT-116 (EC ₅₀ =167 nM), A375 (EC ₅₀ =58 nM), and MIA PaCa-2 (EC ₅₀ =74 nM). In solid tumor cells, CX-5461 induces autophagy or senescence rather than apoptosis. For instance, in melanoma A375 cells and pancreatic cancer MIA PaCa-2 cells, its effects are quantified with Pol I IC ₅₀ values of 113 nM and 54 nM, respectively, while showing significantly less effect on Pol II (Pol II IC ₅₀ > 25 μM for A375 and ~25 mM for MIA PaCa-2). Furthermore, in HCT-116 cells, CX-5461 selectively inhibits rRNA synthesis, with an observed Pol I IC ₅₀ of 142 nM and minimal impact on Pol II (IC ₅₀ > 25 μM).
In vivo	In a mouse model of xenograft human solid tumors, oral administration of CX-5461 (50 mg/kg) demonstrated antitumor activity against solid tumors.
Kinase Assay	Pol I and Pol II Transcription Assay: Two short-lived RNA transcripts (half-lives ~20-30 minutes), one produced by Pol I and another by Pol II, are quantitated by qRT-PCR as a measure of CX-5461-related effects on transcription. The 45S pre-rRNA served as the Pol I transcript and the mRNA for the protooncogene c-myc served as the comparator Pol II transcript. Both Pol I and Pol II transcription are known to be affected by general cellular stress. To minimize the potential effects of such stress, cells are exposed to test agents for only a short period of time (2 hours). This is sufficient time for these transcripts to be reduced by greater than 90% if CX-5461 affects their synthesis.
Cell Research	Cells are plated on 96-well plates and treated the next day with dose response of CX-5461 for 96 hours. Cell viability is determined using Alamar Blue and CyQUANT assays(Only for Reference)

Solubility Information

Solubility	DMSO: 1mg/ml (1.95mM), Sonication is recommended. H ₂ O: 5.1 mg/mL (10 mM), when pH is adjusted to 7 with HCl. Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.947 mL	9.735 mL	19.470 mL
5 mM	0.3894 mL	1.947 mL	3.894 mL
10 mM	0.1947 mL	0.9735 mL	1.947 mL
50 mM	0.0389 mL	0.1947 mL	0.3894 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Drygin D, et al, Cancer Res, 2011, 71(4), 1418-1430.

Li, Dingfeng, Juan Zhang, Ming Wang, Xiaohui Li, Huarui Gong, Huiping Tang, Lin Chen, Lili Wan, and Qiang Liu.