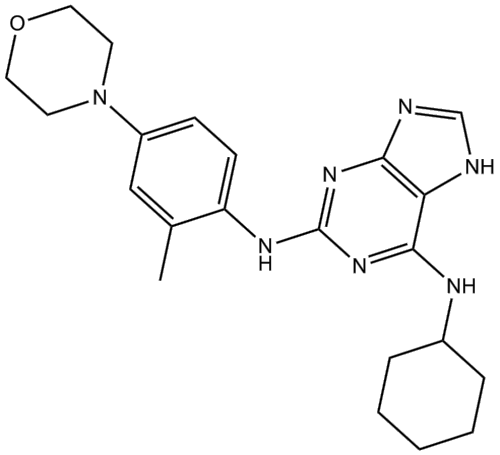
Product Data Sheet

Product Name: MPI-0479605
Cat. No.: GC10083

Chemical Properties

Cas. No.	1246529-32-7		
SMILES	CC1=C(C=CC(=C1)N2CCOCC2)NC3=NC4=C(C(=N3)NC5CCCCC5)NC=N4		
Formula	$C_{22}H_{29}N_7O$	M.Wt	407.51
Solubility	DMF: 1 mg/ml,DMSO: 1.25 mg/ml,DMSO:PBS(pH 7.2) (1:3): 0.25 mg/ml	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.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Protocol

Product Data Sheet

Animal experiment: HCT-116 or Colo-205 cells are transplanted subcutaneously into the flanks of nude (nu+/nu+) mice and compound (MPI-0479605) treatment is initiated when tumor masses reaches an average size of 100 mm3. MPI-0479605 is formulated in 5% dimethylacetamide (DMA)/12% ethanol/40% PEG-300, ispinesib is formulated in 2% cremaphor/2% DMA, and 5-fluorouracil is formulated in 2% sodium bicarbonate. Tumor volume is measured using vernier calipers and tumor growth inhibition (TGI) is calculated as: %TGI= 100-100(change in median tumor volume of treated)/(change in median tumor volume control)[1].

References:

[1]. Tardif KD, et al. Characterization of the cellular and antitumor effects of MPI-0479605, a small-molecule inhibitor of the mitotic kinase Mps1. Mol Cancer Ther. 2011 Dec;10(12):2267-2275.

Background

MPI-0479605 is a small-molecule inhibitor of the Mitotic Kinase Mps1 with IC50 value of 1.8nM [1].

MPI-0479605 is a selective and ATP competitive inhibitor of Mps1. It shows no significant inhibition of 120 other kinases. In cells treated with nocodazole, MPI-0479605 inhibits Mps1 function through promoting the degradation of both cyclin B and securing. MPI-0479605 also suppresses the autophosphorylation of Mps1 in HEK293T cells overexpressing this enzyme. In A549 cells during mitosis, MPI-0479605 causes defects in chromosome segregation. It destroys the ability of cells to align chromosomes at the metaphase plate. Besides that, MPI-0479605-treated cells also show a significant delay or arrest in cell-cycle progression. Moreover, treatment of MPI-0479605 leads to a significant decrease in cell viability in HCT-116 cells and finally causes cell death with GI50 values ranging from 30nM to 100nM. Furthermore, MPI-0479605 shows potent antitumor effects in tumor xenograft models. MPI-0479605 at dose of 30mg/kg results in TGI of 49% in mice bearing HCT-116 xenografts [1].

References:

[1] Tardif K D, Rogers A, Cassiano J, et al. Characterization of the cellular and antitumor effects of MPI-0479605, a small-molecule inhibitor of the mitotic kinase Mps1. Molecular cancer therapeutics,

Product Data Sheet

2011, 10(12): 2267-2275.