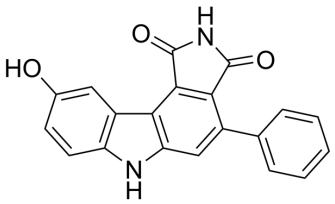
PD 407824

Cat. No.:	HY-18961
CAS No.:	622864-54-4
Molecular Formula:	$C_{20}H_{12}N_2O_3$
Molecular Weight:	328.32
Target:	Checkpoint Kinase (Chk); Wee1
Pathway:	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 : 250 mg/mL (761.45 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.0458 mL	15.2290 mL	30.4581 mL
5 mM	0.6092 mL	3.0458 mL	6.0916 mL
10 mM	0.3046 mL	1.5229 mL	3.0458 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: ≥ 2.08 mg/mL (6.34 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.34 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

PD 407824 is a checkpoint kinase Chk1 and WEE1 inhibitor with IC_{50}s of 47 and 97 nM, respectively. PD 407824 is a chemical BMP sensitizer and increases the sensitivity of cells to sub-threshold amounts of BMP4[1][2].

IC_{50} & Target

Chk1	WEE1
47 nM (IC_{50})	97 nM (IC_{50})

In Vitro

PD 407824 is sufficient to block CHK1, leading to a significant down-regulation of p21, causing activation of CDK8/9, which in turn causes depletion of SMAD2/3[1].

PD 407824 is selective for Chk1 and WEE1 over PKC and Cdk4 with IC_{50}s of 3.4 μM and 3.75 μM, respectively[3].

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

REFERENCES

[1]. Palmer BD, et al. 4-Phenylpyrrolo[3,4-c]carbazole-1,3(2H,6H)-dione inhibitors of the checkpoint kinase Wee1. Structure-activity relationships for chromophore modification and phenyl ring substitution. J Med Chem. 2006 Aug 10;49(16):4896-911.

[2]. Feng L, et al. Discovery of a Small-Molecule BMP Sensitizer for Human Embryonic Stem Cell Differentiation. Cell Rep. 2016 May 31;15(9):2063-75.

[3]. Smaill JB, et al. Synthesis and structure-activity relationships of N-6 substituted analogues of 9-hydroxy-4-phenylpyrrolo[3,4-c]carbazole-1,3(2H,6H)-diones as inhibitors of Wee1 and Chk1 checkpointkinases. Eur J Med Chem. 2008 Jun;43(6):1276-96. Epub 2007 Aug 6.

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