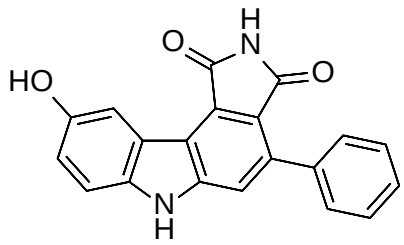
Product data sheet

MedKoo Cat#: 406344 Name: PD0407824 CAS: 622864-54-4 Chemical Formula: $C_{20}H_{12}N_2O_3$ Exact Mass: 328.0848 Molecular Weight: 328.327	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
PD0407824, also known as PD407824 is a potent selective, small molecular CHK1 inhibitor with potential anticancer activity.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	100.28	305.42
Ethanol	8.2	24.98

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.05 mL	15.23 mL	30.46 mL
5 mM	0.61 mL	3.05 mL	6.09 mL
10 mM	0.31 mL	1.52 mL	3.05 mL
50 mM	0.06 mL	0.31 mL	0.61 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Wang L, Wang Y, Chen A, Jalali A, Liu S, Guo Y, Na S, Nakshatri H, Li BY, Yokota H. Effects of a checkpoint kinase inhibitor, AZD7762, on tumor suppression and bone remodeling. Int J Oncol. 2018 Sep;53(3):1001-1012. doi: 10.3892/ijo.2018.4481. Epub 2018 Jul 13. PMID: 30015873; PMCID: PMC6065446.

In vivo study

1. Jiang F, Liu S, Chen A, Li BY, Robling AG, Chen J, Yokota H. Finite Element Analysis of the Mouse Distal Femur with Tumor Burden in Response to Knee Loading. Int J Orthop (Hong Kong). 2018;5(1):863-871. Epub 2018 Feb 28. PMID: 30505850; PMCID: PMC6261479.

7. Bioactivity
Biological target:

PD 407824 is a checkpoint kinase Chk1 and WEE1 inhibitor with IC_{50}s of 47 and 97 nM.

In vitro activity

PD407824 at 0.1, 0.5 and 2 μM reduced the relative proliferation of 4T1.2 cells (Fig. 5A), and the expression level of p-eIF2α was elevated in a dose-dependent manner (Fig. 5B). Furthermore, the scratch assay with 4T1.2 mammary tumor cells revealed that PD407824 suppressed cell motility by inhibiting the healing of the wounded area (Fig. 5C). In addition to its effect on tumor cells,

Product data sheet

PD407824 affects RAW264.7 pre-osteoclasts similarly to AZD7762. PD407824 at 0.1, 0.5 and 2 μM reduced the relative proliferation of RAW264.7 cells (Fig. 5G). In MC3T3 cells, PD407824 at 0.1 and 0.5 μM did not significantly alter the relative cell proliferation, although a higher dosage of 2 μM decreased the number of MC3T3 cells (Fig. 5H).

Reference: Int J Oncol. 2018 Sep;53(3):1001-1012. https://pubmed.ncbi.nlm.nih.gov/30015873/

In vivo activity

One sample was from a placebo-treated mouse, and the other was from a mouse treated with the investigational drug candidate, PD407824, an inhibitor of checkpoint kinases. Mechanical testing and microCT images revealed that bone strength is improved by administration of PD407824. Collectively, this FE study supports the notion that mechanical weakening of the femur was observed in the tumor-invaded trabecular bone, and chemical agents such as PD407824 may potentially assist in preventing bone loss and bone fracture.

Reference: Int J Orthop (Hong Kong). 2018;5(1):863-871. https://pubmed.ncbi.nlm.nih.gov/30505850/