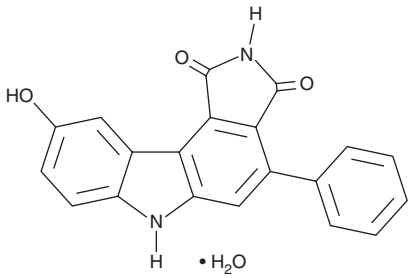
PRODUCT INFORMATION

PD 407824 (hydrate)

Item No. 45243

CAS Registry No.:	1177150-89-8
Formal Name:	9-hydroxy-4-phenyl-pyrrolo[3,4-c] carbazole-1,3(2H,6H)-dione, monohydrate
MF:	$C_{20}H_{12}N_2O_3 \bullet H_2O$
FW:	346.3
Purity:	≥95%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

PD 407824 (hydrate) is supplied as a solid. A stock solution may be made by dissolving the PD 407824 (hydrate) in the solvent of choice, which should be purged with an inert gas. PD 407824 (hydrate) is slightly soluble (0.1-1 mg/ml) in acetonitrile and DMSO.

Description

PD 407824 is an inhibitor of the checkpoint kinases Chk1 and WEE1 (IC_{50}s = 47 and 97 nM, respectively).[1] It is selective for Chk1 and WEE1 over PKC (IC_{50} = 3.4 µM) and Cdk4 (IC_{50} = 3.75 µM), as well as c-Src and the PDGF and FGF receptors (IC_{50}s = >50 µM for all), and other CDKs (IC_{50}s = >50 µM).[2] PD 407824 sensitizes SKOV3 and OVCAR-3 ovarian cancer cells, as well as cisplatin-resistant A2780cis cells, to cisplatin when used at a concentration of 0.5 µM.[3] It also sensitizes C2C12 myoblasts to bone morphogenetic protein 4 (BMP4) and, when used in combination with BMP4, inhibits myotube formation and induces myoblasts to differentiate into mature osteoblasts.[4] PD 407824, in combination with BMP4, induces human embryonic stem cells (hESCs) to differentiate into cells with mesoderm or cytotrophoblast stem cell lineages.

References

1. Smaill, J.B., Baker, E.N., Booth, R.J., *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 checkpoint kinases. *Eur. J. Med. Chem*. **43(6)**, 1276-1296 (2008).
2. Palmer, B.D., Thompson, A.M., Booth, R.J., *et al*. 4-Phenylpyrrolo[3,4-c]carbazole-1,3(2*H*,6*H*)-dione inhibitors of the checkpoint kinase Wee1. Structure-activity relationships for chromophore modification and phenyl ring substitution. *J. Med. Chem*. **49(16)**, 4896-4911 (2006).
3. Arora, S., Bisanz, K.M., Peralta, L.A., *et al*. RNAi screening of the kinome identifies modulators of cisplatin response in ovarian cancer cells. *Gynecol. Oncol*. **118(3)**, 220-227 (2010).
4. Feng, L., Cook, B., Tsai, S.-Y., *et al*. Discovery of a small-molecule BMP sensitizer for human embryonic stem cell differentiation. *Cell Rep*. **15(9)**, 2063-2075 (2016).

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