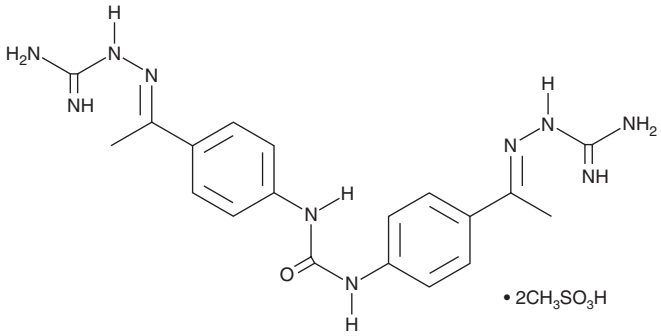
PRODUCT INFORMATION

NSC 109555

Item No. 19811

CAS Registry No.:	15427-93-7
Formal Name:	2,2'-[carbonylbis(imino-4,1-phenyleneethylidyne)]*bis*-hydrazinecarboximidamide, dimethanesulfonate
Synonyms:	DDUG, NCI C04808
MF:	$C_{19}H_{24}N_{10}O \bullet 2CH_3SO_3H$
FW:	600.7
Purity:	≥98%
UV/Vis.:	λ_{max}: 226, 320 nm
Supplied as:	A crystalline 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

NSC 109555 is supplied as a crystalline solid. A stock solution may be made by dissolving the NSC 109555 in the solvent of choice, which should be purged with an inert gas. NSC 109555 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of NSC 109555 in these solvents is approximately 3, 20, and 2 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of NSC 109555 can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of NSC 109555 in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

NSC 109555 is an ATP-competitive inhibitor of checkpoint kinase 2 (Chk2; IC_{50} = 200 nM in a cell-free kinase assay).[1] It is selective for Chk2 over Chk1 and 16 kinases in a panel but does inhibit Brk, c-Met, IGFR, and LCK with IC_{50} values of 210, 6,000, 7,400, and 7,100 nM, respectively. NSC 109555 inhibits Chk2 autophosphorylation and phosphorylation of the Chk2 substrate histone H1 *in vitro* (IC_{50}= 240 nM). It inhibits the growth of, and induces autophagy in, L1210 leukemia cells *in vitro*.[2] NSC 109555 (1,250 nM) potentiates gemcitabine-induced cytotoxicity in MIA PaCa-2, CFPAC-1, PANC-1, and BxPC-3 pancreatic cancer cells, as well as reduces gemcitabine-induced increases in Chk2 phosphorylation and enhances gemcitabine-induced production of reactive oxygen species (ROS) in MIA PaCa-2 cells.[3]

References

1. Jobson, A.G., Cardellina, J.H., II, Scudiero, D., *et al.* Identification of a bis-guanylhydrazone [4,4'-diacetyldiphenylurea-bis(guanylhydrazone); NSC 109555] as a novel chemotype for inhibition of Chk2 kinase. *Mol. Pharm.* **72(4)**, 876-884 (2007).
2. Mikles-Robertson, F., Dave, C., and Porter, C.W. Apparent autophagocytosis of mitochondria in L1210 leukemia cells treated *in vitro* with 4,4'-diacetyl-diphenylurea-bis(guanylhydrazone). *Cancer Res.* **40(4)**, 1054-1061 (1980).
3. Duong, H.-Q., Hong, Y.B., Kim, J.S., *et al.* Inhibition of checkpoint kinase 2 (CHK2) enhances sensitivity of pancreatic adenocarcinoma cells to gemcitabine. *J. Cell. Mol. Med.* **17(10)**, 1261-1270 (2013).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM