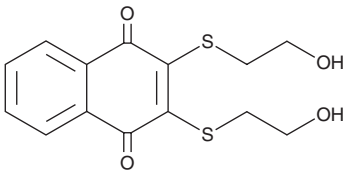
PRODUCT INFORMATION

NSC 95397

Item No. 21431

CAS Registry No.:	93718-83-3
Formal Name:	2,3-*bis*[(2-hydroxyethyl)thio]-1,4-naphthalenedione
Synonyms:	Cdc25 Inhibitor IV, PTP Inhibitor XXIX
MF:	$C_{14}H_{14}O_4S_2$
FW:	310.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 240, 274, 452 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 95397 is supplied as a crystalline solid. A stock solution may be made by dissolving the NSC 95397 in the solvent of choice. NSC 95397 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of NSC 95397 in ethanol is approximately 0.33 mg/ml and approximately 30 mg/ml in DMSO and DMF.

NSC 95397 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, NSC 95397 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. NSC 95397 has a solubility of approximately 0.16 mg/ml in a 1:5 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

NSC 95397 is a 1,4-naphthoquinone-based irreversible inhibitor of Cdc25 dual-specificity phosphatases, with K_i values of 32, 96, and 40 nM for Cdc25A, Cdc25B, and Cdc25C, respectively.[1] It displays >125-fold selectivity for Cdc25 over VH1-related dual-specificity phosphatase and protein tyrosine phosphatase 1b. NSC 95397 significantly inhibits the growth of human and murine carcinoma cells, blocking G_2/M phase transition.[1,2] In rat liver epithelial cells, NSC 95397 induces cell cycle arrest, which is associated with phosphorylation of EGFR, activation of ERK1/2, phosphorylation of connexin43, and downregulation of gap junctional intercellular communication.[3]

References

1. Lazo, J.S., Nemoto, K., Pestell, K.E., *et al.* Identification of a potent and selective pharmacophore for Cdc25 dual specificity phosphatase inhibitors. *Mol. Pharmacol.* **61(4)**, 720-728 (2002).
2. Han, Y., Shen, H., Carr, B.I., *et al.* NAD(P)H:quinone oxidoreductase-1-dependent and -independent cytotoxicity of potent quinone Cdc25 phosphatase inhibitors. *J. Pharmacol. Exp. Ther.* **309(1)**, 64-70 (2004).
3. Melchheier, I., von Montfort, C., Stuhlmann, D., *et al.* Quinone-induced Cdc25A inhibition causes ERK-dependent connexin phosphorylation. *Biochem. Biophys. Res. Commun.* **327(4)**, 1016-1023 (2005).

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