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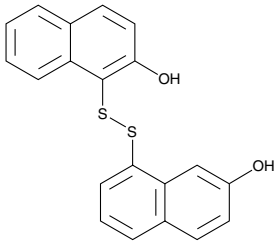
Product Information

IPA-3

Item No. 14759

CAS Registry No.:	42521-82-4
Formal Name:	1,1'-dithiobis-2-naphthalenol
MF:	$C_{20}H_{14}O_2S_2$
FW:	350.5
Purity:	≥95%
Stability:	≥2 years at -20°C
Supplied as:	A crystalline solid
UV/Vis.:	λ_{max}: 223, 357 nm



Laboratory Procedures

For long term storage, we suggest that IPA-3 be stored as supplied at -20°C. It should be stable for at least two years.

IPA-3 is supplied as a crystalline solid. A stock solution may be made by dissolving the IPA-3 in the solvent of choice. IPA-3 is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of IPA-3 in these solvents is approximately 5 mg/ml.

IPA-3 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, IPA-3 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. IPA-3 has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

p21-activated kinase 1 (PAK1) is a member of a family non-receptor serine/threonine kinases that are vital to normal cell function. Binding of various upstream partners to PAK1 results in release of an autoinhibitory domain that blocks activity of the kinase domain.[1] PAK1 expression and activity is upregulated in several human cancers and is a potential therapeutic target for cancer intervention.[1] IPA-3 is a cell-permeable allosteric inhibitor of PAK1 that is non-competitive with respect to ATP binding (IC_{50} = 2.5 µM).[2] It does not, however, inhibit the activity of PAK1 that has been pre-activated with Cdc42. IPA-3 binds covalently to the PAK1 regulatory domain (apparent K_d = 1.9 uM) and prevents binding to the upstream activator Cdc42.[3]

References

1. Kumar, R., Gururaj, A.E., and Barnes, C.J. p21-activated kinases in cancer. *Nat. Rev. Cancer*. **6(6)**, 459-471 (2006).
2. Deacon, S.W., Beeser, A., Fukui, J.A., *et al*. An isoform-selective, small-molecule inhibitor targets the autoregulatory mechanism of p21-activated kinase. *Chem. Biol*. **15(4)**, 322-331 (2008).
3. Viaud, J. and Peterson, J.R. An allosteric kinase inhibitor binds the p21-activated kinase autoregulatory domain covalently. *Mol. Cancer Ther*. **8(9)**, 2559-2565 (2009).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/14759

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