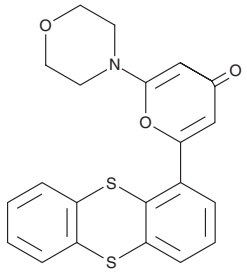
PRODUCT INFORMATION

Ku-55933

Item No. 16336

CAS Registry No.: 587871-26-9
Formal Name: 2-(4-morpholinyl)-6-(1-thianthrenyl)-4H-pyran-4-one
Synonym: ATM Kinase Inhibitor
MF: $C_{21}H_{17}NO_3S_2$
FW: 395.5
Purity: ≥98%
UV/Vis.: λ_{max}: 246 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

Ku-55933 is supplied as a crystalline solid. A stock solution may be made by dissolving the Ku-55933 in the solvent of choice, which should be purged with an inert gas. Ku-55933 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of Ku-55933 in ethanol and DMSO is approximately 10 mg/ml and approximately 30 mg/ml in DMF.

Ku-55933 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, Ku-55933 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Ku-55933 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Ku-55933 is a potent ATP-competitive inhibitor of the ataxia-telangiectasia mutated (ATM) kinase (IC_{50} = 13 nM; K_i = 2.2 nM).[1] Inhibition of ATM by Ku-55933 blocks radiation-induced phosphorylation of downstream cellular targets and sensitizes cells to the cytotoxic effects of both ionizing radiation and chemotherapeutic agents.[1] Ku-55933 induces senescent breast, lung, and colon carcinoma cells to undergo cell death.[2] It also inhibits HIV-1 replication in C8166 human T-lymophocyte cells with an IC_{50} value of 2.4 µM.[3]

References

1. Hickson, I., Zhao, Y., Richardson, C.J., *et al.* Identification and characterization of a novel and specific inhibitor of the ataxia-telangiectasia mutated kinase ATM. *Cancer Res.* **64(24)**, 9152-9159 (2004).
2. Crescenzi, E., Palumbo, G., de Boer, J., *et al.* Ataxia telangiectasia mutated and $p21^{CIP1}$ modulate cell survival of drug-induced senescent tumor cells: Implications for chemotherapy. *Clin. Cancer Res.* **14(6)**, 1877-1887 (2008).
3. Lau, A., Swinbank, K.M., Ahmed, P.S., *et al.* Suppression of HIV-1 infection by a small molecule inhibitor of the ATM kinase. *Nat. Cell. Biol.* **7(5)**, 493-500 (2005).

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