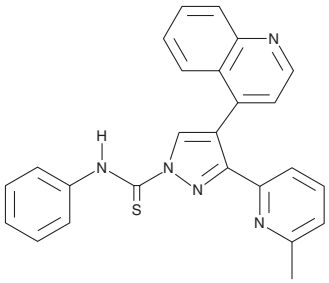
PRODUCT INFORMATION

A 83-01

Item No. 9001799

CAS Registry No.:	909910-43-6
Formal Name:	3-(6-methyl-2-pyridinyl)-N-phenyl-4-(4-quinolinyl)-1H-pyrazole-1-carbothioamide
MF:	$C_{25}H_{19}N_5S$
FW:	421.5
Purity:	≥95%
UV/Vis.:	λ_{max}: 227, 307 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years



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

Laboratory Procedures

A 83-01 is supplied as a crystalline solid. A stock solution may be made by dissolving the A 83-01 in the solvent of choice. A 83-01 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of A 83-01 in these solvents is approximately 0.3, 14, and 25 mg/ml, respectively.

A 83-01 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, A 83-01 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. A 83-01 has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

A 83-01 is an inhibitor of TGF-β type I receptor kinase (ALK5), activin type IB receptor (ALK4), and nodal type I receptor (ALK7) (IC_{50}s = 12, 45, and 7.5 nM, respectively).[1] It blocks the phosphorylation of SMAD2/3 and inhibits TGF-β-induced epithelial-to-mesenchymal transition.[1] It has little effect on bone morphogenic type I receptors, p38 mitogen-activated protein kinase, or ERK.[1] A 83-01 has been used to reprogram fibroblasts into alternative lineages, including neural stem cells and cardiomyocytes.[2,3]

References

1. Tojo, M., Hamashima, Y., Hanyu, A., *et al.* The ALK-5 inhibitor A-83-01 inhibits Smad signaling and epithelial-to-mesenchymal transition by transforming growth factor-β. *Cancer Sci.* **96(11)**, 791-800 (2005).
2. Cao, N., Huang, Y., Zheng, J., *et al.* Conversion of human fibroblasts into functional cardiomyocytes by small molecules. *Science* **Apr**, (2016).
3. Zhang, M., Lin, Y. H., Sun, Y. J., *et al.* Pharmacological reprogramming of fibroblasts into neural stem cells by signaling-directed transcriptional activation. *Cell Stem Cell* **Apr**, (2016).

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