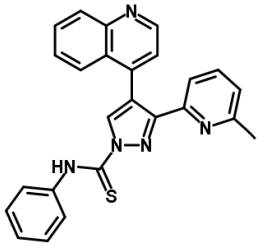
Product Specification Sheet

Product Name	Stemolecule™ A83-01
Description	A83-01 is a selective inhibitor of the transforming growth factor-beta (TGF-β) type I receptor ALK5, the Activin/Nodal receptor ALK4, and the nodal receptor ALK7[1]. This molecule is more potent than SB431542 in its inhibition of ALK4, 5, and 7, and only weakly inhibits ALK1, 2, 3, and 6. A83-01 inhibits the TGF-β-induced epithelial-to-mesenchymal transition (EMT) via the inhibition of Smad2 phosphorylation[2].
Catalog Number	04-0014
Size	2 mg
Chemical Name	3-(6-Methyl-2-pyridinyl)-*N*-phenyl-4-(4-quinolinyl)-1*H*-pyrazole-1-carbothioamide
Chemical Formula	$C_{25}H_{19}N_5S$
Structure	
Molecular Weight	421.52
CAS Number	909910-43-6
Purity	Greater than 98% by HPLC analysis
Formulation	Pale yellow solid
Solubility	For a 10 mM concentrated stock solution of A83-01, reconstitute the compound by adding 474.5 µl of DMSO to the entire contents of the vial. If precipitate is observed, warm the solution to 37°C for 2 to 5 minutes. For use in cell culture, warm the medium just prior to adding the reconstituted compound. Once the compound is added, mix and filter-sterilize the medium using a 0.2 µM low-protein binding filter. A83-01 is soluble in DMSO at 50 mM.
Storage and Stability	Store powder at 4°C protected from light. Following reconstitution, store aliquots at -20°C. Stock solutions are stable for 6 months when stored as directed.
Quality Control	The purity of A83-01 was determined by HPLC analysis. The accurate mass was determined by mass spectrometry. No acute cytotoxicity was observed in mouse embryonic stem cells following a 6 hour exposure to 1 nM - 100 µM of A83-01.

References

1. Tojo, M., Hamashima, Y., Hanyu, A., Kajimoto, T., Saitoh, M., Miyazono, K., Node, M., and Imamura, T. (2005) The ALK-5 inhibitor A-83-01 inhibits Smad signaling and epithelial-to-mesenchymal transition by transforming growth factor-beta. Cancer Sci. 96: 791-800.
2. Li, W., Wei, W., Zhu, S., Zhu, J., Shi, Y., Lin, T., Hao, E., Hayek, A., Deng, H., and Ding, S. (2009) Generation of rat and human induced pluripotent stem cells by combining genetic reprogramming and chemical inhibitors. Cell Stem Cell 4: 16-19.

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