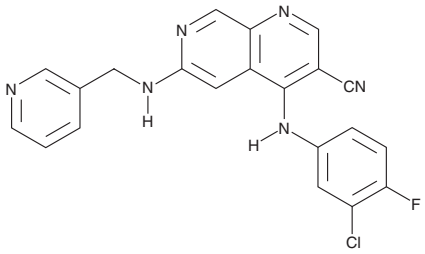
PRODUCT INFORMATION

Tpl2 Kinase Inhibitor

Item No. 19710

CAS Registry No.: 871307-18-5
Formal Name: 4-[(3-chloro-4-fluorophenyl)amino]-6-[(3-pyridinylmethyl)amino]-1,7-naphthyridine-3-carbonitrile
Synonyms: c-Cot Kinase Inhibitor, MAP3K8 Kinase Inhibitor, Tumor Progression Locus 2 Kinase Inhibitor
MF: $C_{21}H_{14}ClFN_6$
FW: 404.8
Purity: ≥95%
UV/Vis.: λ_{max}: 251, 293, 315, 417 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

Tpl2 kinase inhibitor is supplied as a crystalline solid. A stock solution may be made by dissolving the Tpl2 kinase inhibitor in the solvent of choice. Tpl2 kinase inhibitor is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of Tpl2 kinase inhibitor in these solvents is approximately 1 mg/ml.

Tpl2 kinase inhibitor is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, Tpl2 kinase inhibitor should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Tpl2 kinase inhibitor has a solubility of approximately 0.33 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

Tpl2 kinase inhibitor is an inhibitor of tumor progression locus 2 (Tpl2; IC_{50} = 0.05 µM).[1] It is selective for Tpl2 over MEK, p38 MAPK, Src, MK2, and PKC (IC_{50}s = >40, 180, >400, 110, and >400 µM, respectively). Tpl2 kinase inhibitor inhibits LPS-induced TNF-α production in isolated human monocytes and whole blood (IC_{50}s = 0.7 and 8.5 µM, respectively). It enhances differentiation induced by 1,25-dihydroxy vitamin D_3 (calcitriol; Item No. 71820) in HL-60 and U937 leukemia cells when used at a concentration of 5 µM.[2] Tpl2 kinase inhibitor (5 µM) inhibits the proliferation of KG-1a leukemia cells.[3]

References

1. Gavrin, L.K., Green, N., Hu, Y., *et al.* Inhibition of Tpl2 kinase and TNF-α production with 1,7-naphthyridine-3-carbonitriles: Synthesis and structure-activity relationships. *Bioorg. Med. Chem. Lett.* **15(23)**, 5288-5292 (2005).
2. Wang, X. and Studzinski, G.P. Expression of MAP3 kinase COT1 is up-regulated by 1,25-dihydroxyvitamin D_3 in parallel with activated c-jun during differentiation of human myeloid leukemia cells. *J. Steroid Biochem. Mol. Biol.* **121(1-2)**, 395-398 (2010).
3. Wang, X., Gocek, E., Novik, V., *et al.* Inhibition of Cot1/Tlp2 oncogene in AML cells reduces ERK5 activation and upregulates $p27^{Kip1}$ concomitant with enhancement of differentiation and cell cycle arrest induced by silibinin and 1,25-dihydroxyvitamin D_3. *Cell Cycle* **9(22)**, 4542-4551 (2010).

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