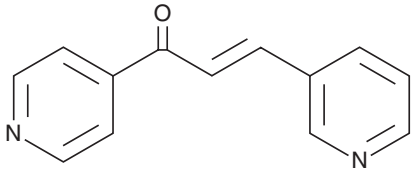
PRODUCT INFORMATION

3PO

Item No. 19276

CAS Registry No.:	18550-98-6
Formal Name:	3-(3-pyridinyl)-1-(4-pyridinyl)-2E-propen-1-one
MF:	$C_{13}H_{10}N_2O$
FW:	210.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 226, 302 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

3PO is supplied as a crystalline solid. A stock solution may be made by dissolving the 3PO in the solvent of choice, which should be purged with an inert gas. 3PO is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 3PO in these solvents is approximately 2, 25, and 5 mg/ml, respectively.

3PO is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 3PO should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 3PO has a solubility of approximately 0.09 mg/ml in a 1:10 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

3PO is a competitive inhibitor of 6-phosphofructo-2-kinase/fructose-2,6-bisphosphate 3 (PFKFB3; IC_{50} = 23 µM) that causes a rapid reduction in fructose-2,6-bisphosphate (F2,6BP), glucose uptake, and lactate secretion.[1,2] This is followed by a reduction in the steady-state concentration of ATP and NADH, resulting in cell cycle arrest in Jurkat T cell leukemia cells.[1,2] 3PO is selectively cytostatic to *ras*-transformed bronchial epithelial cells relative to normal bronchial epithelial cells.[1] 3PO markedly reduces intracellular F2,6BP, glucose uptake, and growth of established tumors in mice.[1] It also blocks angiogenesis, reducing vessel sprouting in endothelial cell spheroids, zebrafish embryos, and the postnatal mouse retina by inhibiting endothelial cell proliferation and migration.[3]

References

1. Clem, B., Telang, S., Clem, A., *et al.* Small-molecule inhibition of 6-phosphofructo-2-kinase activity suppresses glycolytic flux and tumor growth. *Mol. Cancer Ther.* **7(1)**, 110-120 (2008).
2. Clem, B.F., O'Neal, J., Tapolsky, G., *et al.* Targeting 6-phosphofructo-2-kinase (PFKFB3) as a therapeutic strategy against cancer. *Mol. Cancer Ther.* **12(8)**, 1461-1470 (2013).
3. Schoors, S., De Bock, K., Cantelmo, A.R., *et al.* Partial and transient reduction of glycolysis by PFKFB3 blockade reduces pathological angiogenesis. *Cell Metab.* **19(1)**, 37-48 (2014).

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