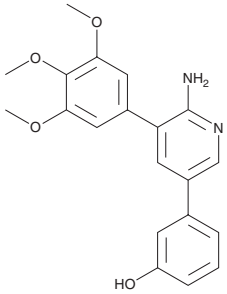
PRODUCT INFORMATION

K02288

Item No. 16678

CAS Registry No.:	1431985-92-0
Formal Name:	3-[6-amino-5-(3,4,5-trimethoxyphenyl)-3-pyridinyl]-phenol
MF:	$C_{20}H_{20}N_2O_4$
FW:	352.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 255, 325 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

K02288 is supplied as a crystalline solid. A stock solution may be made by dissolving the K02288 in the solvent of choice, which should be purged with an inert gas. K02288 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of K02288 in ethanol is approximately 0.1 mg/ml and approximately 30 mg/ml in DMSO and DMF.

K02288 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, K02288 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. K02288 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Activation of bone morphogenetic protein (BMP) type I receptors, also known as activin receptor-like kinases (ALK1-7), leads to the assembly of SMAD complexes, which translocate to the nucleus to induce transcriptional activation important for normal development and tissue repair.[1] K02288 is a 2-aminopyridine-based inhibitor of ALK1 and ALK2 with IC_{50} values of 1.8 and 1.1 nM, respectively.[2] It is less selective for ALK3, 4, 5, and 6 subtypes and the type II BMP receptor ActRIIA, demonstrating IC_{50} values of 34.4, 302, 321, 6.4, and 220 nM, respectively.[2] K02288 can prevent BMP4-induced SMAD1/5/8 pathway activation *in vitro* (IC_{50} = 100 nM) without affecting TGF-β signaling. Furthermore, at 8-10 µM, K02288 has been used to induce the dorsalization of zebrafish embryos. Through specific inhibition of BMP signaling, this compound can be used to research stem cell biology and disease models of musculoskeletal dysplasia and cancer.[2]

References

1. Brivanlou, A.H. and Darnell, J.E., Jr. Signal transduction and the control of gene expression. *Science* **295(5556)**, 813-818 (2002).
2. Sanvitale, C.E., Kerr, G., Chaikuad, A., *et al.* A new class of small molecule inhibitor of BMP signaling. *PLoS One* **8(4)**, 62721 (2013).

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