bio-techne
TOCRIS

Print Date: Mar 31st 2025

Certificate of Analysis

www.tocris.com

Product Name: **DMH-1** **Catalog No.: 4126** **Batch No.: 4**

CAS Number: 1206711-16-1

IUPAC Name: 4-[6-[4-(1-Methylethoxy)phenyl]pyrazolo[1,5-*a*]pyrimidin-3-yl]-quinoline

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{24}H_{20}N_4O$

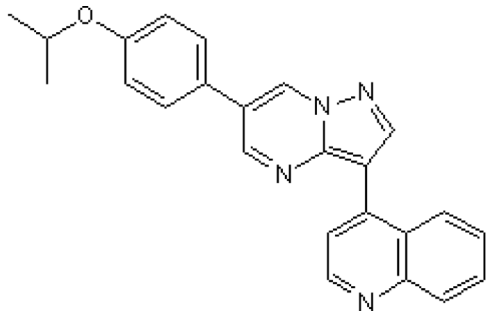
Batch Molecular Weight: 380.44

Physical Appearance: Yellow solid

Solubility: DMSO to 20 mM

Storage: Store at +4°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.6% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	75.77	5.3	14.73
Found	75.4	5.29	14.69

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

DMH-1 is a selective inhibitor of bone morphogenic protein (BMP) type-I receptor activin receptor-like kinase 2 (ALK2) receptor (IC_{50} = 108 nM or 12.6 nM in in vitro kinase assays). DMH-1 exhibits 6- and 19-fold selectivity for ALK-2 over ALK-1 and ALK-3, respectively, and no significant inhibition of AMPK, ALK5, KDR (VEGFR-2) or PDGFRβ receptors. DMH-1 blocks BMP4-induced phosphorylation of Smads 1, 5 and 8 in HEK293 cells. Promotes neurogenesis in human induced pluripotent stem cells (iPSCs) when used in combination with SB 431542 (Cat. No. 1614). DMH-1 suppresses lung cancer cell proliferation, migration, invasion in vitro and reduces... Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:

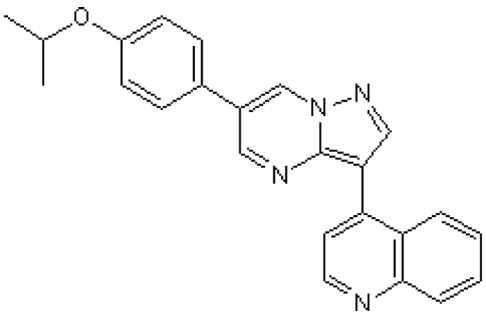
Batch Molecular Formula: $C_{24}H_{20}N_4O$

Batch Molecular Weight: 380.44

Physical Appearance: Yellow solid

Minimum Purity: ≥98%

Batch Molecular Structure:



Storage: Store at +4°C

Solubility & Usage Info:

DMSO to 20 mM

When purchased as a 1mg unit, this product is supplied in lyophilized form. It may appear as a solid, gel or film and be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Guan *et al* (2022) Chemical reprogramming of human somatic cells to pluripotent stem cells. Nature ***605*** 325. PMID: 35418683.

Jung *et al* (2018) *In vitro* and *in vivo* imaging and tracking of intestinal organoids from human induced pluripotent stem cells. FASEB J. ***32*** 111. PMID: 28855280.

Sheng *et al* (2015) DMH1 (4-[6-(4-isopropoxyphenyl)pyrazolo[1,5-a]pyrimidin-3-yl]quinoline) inhibits chemotherapeutic drug-induced autophagy. Acta Pharmacol.Sinica ***5*** 330. PMID: 26579463.

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