

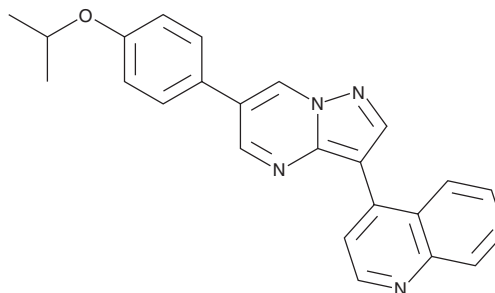
# PRODUCT INFORMATION



## DMH1

Item No. 16679

**CAS Registry No.:** 1206711-16-1  
**Formal Name:** 4-[6-[4-(1-methylethoxy)phenyl]pyrazolo[1,5-a]pyrimidin-3-yl]-quinoline  
**Synonyms:** BMP Inhibitor II, DorsoMorphin  
Homolog 1, VU036482  
**MF:** C<sub>24</sub>H<sub>20</sub>N<sub>4</sub>O  
**FW:** 380.4  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 230, 279, 320 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

DMH1 is supplied as a crystalline solid. A stock solution may be made by dissolving the DMH1 in the solvent of choice. DMH1 is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of DMH1 in these solvents is approximately 1 and 20 mg/ml, respectively.

DMH1 is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

### Description

Bone morphogenetic proteins (BMP) are secreted signaling proteins, many of which are involved in various developmental processes, in addition to bone formation.<sup>1</sup> DMH1 is an analog of the non-selective BMP receptor inhibitor dorsomorphin (Item No. 11967) that potently inhibits the kinase activity of activin receptor-like kinase 2 (ALK2; IC<sub>50</sub> = 13-108 nM).<sup>2,3</sup> It is much less effective at ALK4, ALK5, AMPK, KDR (VEGFR2) or PDGFRβ, although it inhibits ALK1 and ALK3 at nanomolar concentrations.<sup>2,3</sup> DMH1 is effective *in vivo*, as it disrupts dorsoventral development in zebrafish.<sup>2</sup> It also affects stem cell development, increasing cardiomyocyte progenitors and promoting neurogenesis.<sup>4,5</sup> DMH1 inhibits the growth of lung cancer cells, reducing tumor growth in a xenograft mouse model.<sup>6</sup>

### References

1. Sakata, T. and Chen, J.K. *Chem. Soc. Rev.* **40**(8), 4318-4331 (2011).
2. Hao, J., Ho, J.N., Lewis, J.A., *et al.* *ACS Chem. Biol.* **5**(2), 245-253 (2010).
3. Mohedas, A.H., Xing, X., Armstrong, K.A., *et al.* *ACS Chem. Biol.* **8**(6), 1291-1302 (2013).
4. Ao, A., Hao, J., Hopkins, C.R., *et al.* *PLoS One* **7**(7), (2012).
5. Neely, M.D., Litt, M.J., Tidball, A.M., *et al.* *ACS Chem. Neurosci.* **3**, 482-491 (2012).
6. Hao, J., Lee, R., Chang, A., *et al.* *PLoS One* **9**(3), 1-6 (2014).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM