



# Dorsomorphin

# Data Sheet

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<b>Catalog Number:</b>	MC11064	<b>Product Type:</b>	Small Molecule
<b>Bio-Activity:</b>	AMPK inhibitor	<b>CAS #:</b>	866405-64-3
<b>Research Categories:</b>	Stem cells, cell death, cancer, diabetes, atherosclerosis	<b>Chemical Name:</b>	6-[4-[2-(1-Piperidinyl)ethoxy]phenyl]-3-(4-pyridinyl)-pyrazolo[1,5-a]pyrimidine
<b>Solubility:</b>	Soluble in DMSO (up to 3 mg/ml).	<b>Molecular Formula:</b>	C24H25N5O
<b>Purity:</b>	> 98%	<b>Molecular Weight:</b>	399.49
<b>Format:</b>	Powder	<b>Ship Temp:</b>	Ambient
<b>Storage:</b>	-20°C		

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## Application Notes

### Description/Data:

Potent, selective and ATP-competitive inhibitor of AMP-activated protein kinase (AMPK) ( $K_i = 109$  nM) [1]. It displays no significant inhibition of ZAPK, SYK, PKCT, PKA and JAK3. It inhibits bone morphogenetic protein (BMP) type I receptors (ALK2, ALK3 and ALK6) [2]. Dorsomorphin has been shown to promote cardiomyogenesis in mouse embryonic stem cells (ESCs) in vitro [3]. Induces autophagy in cancer cell lines via a mechanism independent of AMPK inhibition [4].

### References:

- 1) Zhou et al.(2001) Role of AMP-activated protein kinase in mechanism of metformin action; *J. Clin. Invest.* 108 1167
- 2) Yu et al. (2008) Dorsomorphin inhibits BMP signals required for embryogenesis and iron metabolism. *Nat. Chem. Biol.* 4 33
- 3) Hao et al. (2008) Dorsomorphin, a selective small molecule inhibitor of BMP signaling, promotes cardiomyogenesis in embryonic stem cells. *PLoS ONE* 3 2904
- 4) Vucicevic et al. (2011) Compound C induces protective autophagy in cancer cells through AMPK inhibition-independent blockade of Akt/mTOR pathway. *Autophagy* 7 40

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