



Dorsomorphin

Data Sheet

Catalog Number: MC11064

Product Type: Small Molecule

Bio-Activity: AMPK inhibitor

CAS #: 866405-64-3

Research Categories: Stem cells, cell death, cancer, diabetes, atherosclerosis

Chemical Name: 6-[4-[2-(1-Piperidinyl)ethoxy]phenyl]-3-(4-pyridinyl)-pyrazolo[1,5-a]pyrimidine

Solubility: Soluble in DMSO (up to 3 mg/ml).

Molecular Formula: C₂₄H₂₅N₅O

Purity: > 98%

Molecular Weight: 399.49

Format: Powder

Ship Temp: Ambient

Storage: -20°C

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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Neuromics Antibodies • 5325 West 74th Street, Suite 8 • Edina, MN 55439
phone 866-350-1500 • fax 612-677-3976 • e-mail: pshuster@neuromics.com