

Certificate of Analysis

www.tocris.com

Product Name: Dorsomorphin dihydrochloride

Catalog No.: 3093

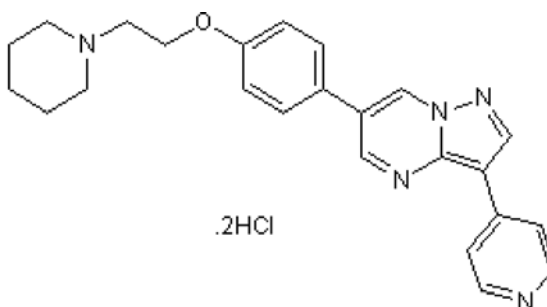
Batch No.: 6

CAS Number: 1219168-18-9

IUPAC Name: 6-[4-[2-(1-Piperidinyloxy)phenyl]-3-(4-pyridinyl)-pyrazolo[1,5-a]pyrimidine dihydrochloride

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	C ₂₄ H ₂₅ N ₅ O.2HCl.1½H ₂ O
Batch Molecular Weight:	499.43
Physical Appearance:	Pale yellow solid
Solubility:	water to 100 mM DMSO to 20 mM with gentle warming
Storage:	Desiccate at RT
Batch Molecular Structure:	



2. ANALYTICAL DATA

HPLC:	Shows 99.8% purity
¹H NMR:	Consistent with structure
Mass Spectrum:	Consistent with structure
Microanalysis:	

	Carbon	Hydrogen	Nitrogen
Theoretical	57.72	6.05	14.02
Found	57.66	6.02	14.01

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

bio-techne.com
info@bio-techne.com
techsupport@bio-techne.com

North America
Tel: (800) 343 7475

China
info.cn@bio-techne.com
Tel: +86 (21) 52380373

Europe Middle East Africa
Tel: +44 (0)1235 529449

Rest of World
www.tocris.com/distributors
Tel: +1 612 379 2956

Product Name: Dorsomorphin dihydrochloride

Catalog No.: 3093

Batch No.: 6

CAS Number: 1219168-18-9

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

Description:

Potent inhibitor of AMP-activated protein kinase (AMPK) ($K_i = 109$ nM). Displays no significant activity on several structurally related kinases including ZAPK, SYK, PKC θ , PKA and JAK3. Inhibits AMPK activation induced by AICAR (Cat. No. 2840) and metformin (Cat. No. 2864). Also inhibits bone morphogenetic protein (BMP) type I receptors (ALK2, ALK3 and ALK6). Promotes cardiomyogenesis in mouse embryonic stem cells (ESCs) in vitro. Promotes neural differentiation of hPSCs as part of a chemical cocktail. Shown to induce autophagy in cancer cell lines via a mechanism independent of AMPK inhibition. Please see product datasheet on www.tocris.com for full description.

Physical and Chemical Properties:

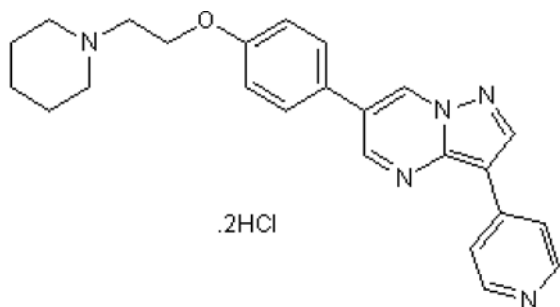
Batch Molecular Formula: C₂₄H₂₅N₅O.2HCl.1½H₂O

Batch Molecular Weight: 499.43

Physical Appearance: Pale yellow solid

Minimum Purity: ≥98%

Batch Molecular Structure:



References:

- Chen *et al*** (2019) Chemically defined neural conversion of human pluripotent stem cells. *Methods Mol.Biol.* **1919** 59. PMID: 30656621.
- Diekmann *et al*** (2015) A reliable and efficient protocol for human pluripotent stem cell differentiation into the definitive endoderm based on dispersed single cells. *Stem Cells Dev.* **24** 190. PMID: 25137387.
- Vucicevic *et al*** (2011) Compound C induces protective autophagy in cancer cells through AMPK inhibition-independent blockade of Akt/mTOR pathway. *Autophagy* **7** 40. PMID: 20980833.
- Hao *et al*** (2008) Dorsomorphin, a selective small molecule inhibitor of BMP signaling, promotes cardiomyogenesis in embryonic stem cells. *PLoS ONE* **3** 2904. PMID: 18682835.
- Yu *et al*** (2008) Dorsomorphin inhibits BMP signals required for embryogenesis and iron metabolism. *Nat.Chem.Biol.* **4** 33. PMID: 18026094.
- Zhou *et al*** (2001) Role of AMP-activated protein kinase in mechanism of MetF. action. *J.Clin.Invest.* **108** 1167. PMID: 11602624.

Storage: Desiccate at RT

Solubility & Usage Info:

water to 100 mM

DMSO to 20 mM with gentle warming

CAUTION - This product is hygroscopic and we recommend that it is desiccated upon arrival.

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. Our standard recommendations are:

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.

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

bio-techne.com

info@bio-techne.com

techsupport@bio-techne.com

North America

Tel: (800) 343 7475

China

info.cn@bio-techne.com

Tel: +86 (21) 52380373

Europe Middle East Africa

Tel: +44 (0)1235 529449

Rest of World

www.tocris.com/distributors

Tel:+1 612 379 2956