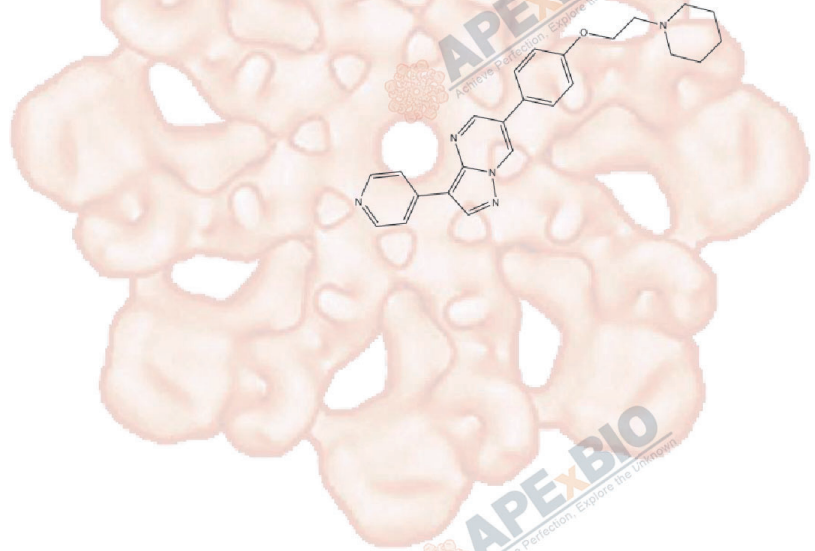


Product Data Sheet

Dorsomorphin (Compound C)

Cat. No.:	B3252
CAS No.:	866405-64-3
Formula:	C ₂₄ H ₂₅ N ₅ O
M.Wt:	399.49
Synonyms:	Compound C
Target:	PI3K/Akt/mTOR Signaling
Pathway:	AMPK
Storage:	Store at -20°C



Solvent & Solubility

≥ 8.49 mg/mL in DMSO with ultrasonic and warming, insoluble in H₂O

In Vitro	Preparing Stock Solutions	Mass			
		Solvent Concentration	1mg	5mg	10mg
		1 mM	2.5032 mL	12.5160 mL	25.0319 mL
		5 mM	0.5006 mL	2.5032 mL	5.0064 mL
		10 mM	0.2503 mL	1.2516 mL	2.5032 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary	AMPK inhibitor	
IC ₅₀ & Target		
In Vitro	Cell Viability Assay	
	Cell Line:	HT-29 human colon cancer cells and HeLa cells, zebrafish embryos
	Preparation method:	This compound is soluble in DMSO. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
	Reacting conditions:	40 μM, 4-10 μM, 30 min
	Applications:	Dorsomorphin could inhibit AMPK activity in intact hepatocytes. Dorsomorphin

inhibited autophagic proteolysis. Dorsomorphin inhibited ACC phosphorylation by 80%. Dorsomorphin inhibited proteolysis in HT-29 cells. Dorsomorphin inhibited AMPK activity in HeLa cells expressing LKB1 and STRAD and in control HeLa cells. Dorsomorphin induced dorsalization in zebrafish embryos. Dorsomorphin inhibited BMP4-induced phosphorylation of BMP-responsive SMADs with the IC50 of 0.47 μ M.

Animal experiment

Animal models: C57BL/6 mice injected via the tail vein with 0.2 g/kg of dextran or 0.2 g/kg of iron-dextran USP, zebrafish

Dosage form: Intraperitoneal injection, 10 mg/kg

Applications: Dorsomorphin reduced hepatic hepcidin mRNA levels to one-third of that of vehicle-injected mice. Administration of dorsomorphin over 24 h led to a 60% increase in total serum iron concentrations. Injection of dorsomorphin in mice abolished the iron-mediated increase in hepatic SMAD1/5/8 phosphorylation. Intraperitoneal injection of iron-dextran in adult zebrafish led to a nearly three-fold increase in SMAD1/5/8 phosphorylation in liver extracts within 1 h. Coinjected with iron-dextran and dorsomorphin decreased SMAD1/5/8 phosphorylation by nearly three-fold relative to fish injected with iron-dextran and vehicle.

Other notes: Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

In Vivo

Product Citations

1. White SM, Avantaggiati ML, et al. "YAP/TAZ Inhibition Induces Metabolic and Signaling Rewiring Resulting in Targetable Vulnerabilities in NF2-Deficient Tumor Cells." Dev Cell. 2019 May 6;49(3):425-443.e9.PMID:31063758
2. Wei Q, Zhang B, et al. "Maslinic Acid Inhibits Colon Tumorigenesis by the AMPK-mTOR Signaling Pathway." J Agric Food Chem. 2019 Apr 17;67(15):4259-4272.PMID:30913881
3. Tian L, Cao W, et al. "Pretreatment with Tiliain improves mitochondrial energy metabolism and oxidative stress in rats with myocardial ischemia/reperfusion injury via AMPK/SIRT1/PGC-1 alpha signaling pathway." J Pharmacol Sci. 2019 Apr;139(4):352-360.PMID:30910451
4. Liu Y, Hu X, et al. "Rosiglitazone metformin adduct inhibits hepatocellular carcinoma proliferation via activation of AMPK/p21 pathway." Cancer Cell Int. 2019 Jan 11;19:13.PMID:30651718
5. Li X, Liu J, et al. "Dichloroacetate ameliorates cardiac dysfunction caused by ischemic insults through AMPK signal pathway- not only shifts metabolism." Toxicol Sci. 2018 Oct 29.PMID:30371859

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References

[1]. Meley D, Bauvy C, Houben-Weerts J H P M, et al. AMP-activated protein kinase and the regulation of autophagic proteolysis[J]. Journal of biological chemistry, 2006, 281(46): 34870-34879.

[2]. Paul B Y, Hong C C, Sachidanandan C, et al. Dorsomorphin inhibits BMP signals required for embryogenesis and iron metabolism[J]. Nature chemical biology, 2008, 4(1): 33-41.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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