Dorsomorphin inhibits the bone morphogenetic protein (BMP) pathway by targeting the type I BMP receptors activin receptor-like kinase (ALK) 2, ALK3, and ALK6. It is also a potent inhibitor of AMP-activated protein kinase (AMPK; Ki = 109 nM) but does not significantly inhibit structurally related kinases such as ZAPK, SYK, PKCθ, PKA, or JAK3 (Bain et al.; Yu et al.).

**Product Description**

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**Molecular Name:** Dorsomorphin  
**Alternative Names:** Compound C  
**CAS Number:** 866405-64-3  
**Chemical Formula:** C24H25N5O  
**Molecular Weight:** 399.5 g/mol  
**Purity:** ≥ 98%  
**Chemical Name:** 6-[4-[2-(1-piperidinyl)ethoxy]phenyl]-3-(4-pyridinyl)-pyrazolo[1,5-a]pyrimidine  
**Structure:**

![Chemical Structure of Dorsomorphin](image)

**Properties**

**Physical Appearance:** A crystalline solid  
**Storage:** Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.  
**Solubility:**  
- DMSO ≤ 12 mM (with heat applied)  
- Absolute ethanol ≤ 350 µM  
- Dimethylformamide (DMF) ≤ 6.2 mM  

For example, to prepare a 200 µM stock solution in absolute ethanol, resuspend 10 mg in 130 mL of absolute ethanol.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in absolute ethanol at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final ethanol concentration above 0.1% due to potential cell toxicity.
Published Applications

DIFFERENTIATION
- Promotes differentiation of neural progenitor cells from human pluripotent stem cells (Morizane et al.; Zhou et al.).
- Promotes differentiation of cardiomyocytes from mouse and human pluripotent stem cells (Hao et al.; Kattman et al.).
- Promotes differentiation of adipocytes and suppresses osteogenic differentiation of osteoblasts from human mesenchymal cells (Kim et al.).

References


Related Small Molecules

For a complete list of small molecules available from STEMCELL Technologies, visit www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

This product is hazardous. Please refer to the Safety Data Sheet (SDS).