# Product Specification Sheet

**Product Name**
Stemolecule™ Dorsomorphin

**Description**
Stemolecule Dorsomorphin dihydrochloride is a potent inhibitor of AMP-activated protein kinase (AMPK) (Ki=109nM) and bone morphogenic protein (BMP) signaling\(^1,2\). It was identified in a screen for compounds that perturb dorsoventral axis formation in zebrafish\(^3\). Dorsomorphin functions through inhibition of BMP type I receptors ALK2, ALK3 and ALK6 and thus blocks BMP-mediated SMAD1/5/8 phosphorylation\(^3\). BMP signaling coordinates developmental patterning and have essential physiological roles in mature organisms\(^4,5\). Dorsomorphin has been used to probe BMP signaling in iron-hepcidin homeostasis, cardiomyogenesis and osteogenesis\(^3,6,7\).

**Catalog Number**
04-0024

**Size**
2 mg

**Alternate Name**
6-[4-(2-piperidin-1-ylethoxy)phenyl]-3-pyridin-4-ylpyrazolo[1,5-a]pyrimidine

**Chemical Formula**
C\(_{24}\)H\(_{25}\)N\(_5\)O.2HCl.H\(_2\)O

**Structure**
![Dorsomorphin Structure](image)

**Molecular Weight**
490.43

**CAS Number**
866405-64-3

**Purity**
Greater than 99% by HPLC analysis

**Formulation**
Yellow solid

**Solubility**
For a 10 mM concentrated stock solution of Dorsomorphin, reconstitute the compound by adding 407.8 μl of DMSO to the entire contents of the vial. If precipitate is observed, warm the solution to 37°C for 2 to 5 minutes. For cell culture, the media should be prewarmed prior to adding the reconstituted compound. Note: for most cells, the maximum tolerance to DMSO is less than 0.5%. This molecule is soluble in DMSO at 100 mM and water at 100 mM.

**Storage and Stability**
Store powder at 4°C protected from light. Following reconstitution, store aliquots at -20°C. Stock solutions are stable for 6 months when stored as directed.

**Quality Control**
The purity of Dorsomorphin was determined by HPLC analysis. The accurate mass was determined by mass spectrometry. Cellular toxicity of Dorsomorphin was tested on mouse embryonic stem cells.
Product Specification Sheet

References