Purmorphamine is a tri-substituted purine derivative that activates the Hedgehog pathway by directly binding to and activating the Hedgehog receptor Smoothened (EC$_{50}$ = 1 µM; Sinha and Chen).

**Chemical Name:** 
9-cyclohexyl-N-[4-(morpholinyl)phenyl]-2-(1-naphthalenyloxy)-9H-purin-6-amine

**Molecular Name:** 
Purmorphamine

**CAS Number:** 
483367-10-8

**Chemical Formula:** 
C$_{31}$H$_{32}$N$_{6}$O$_{2}$

**Molecular Weight:** 
520.6 g/mol

**Purity:** 
$\geq$ 98%

**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 $\leq$ 20 mM
  - For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 192 µL of fresh DMSO.

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 DMSO 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 DMSO concentration above 0.1% due to potential cell toxicity.
Published Applications

DIFFERENTIATION
- Promotes differentiation of ventral spinal progenitor cells and motor neurons from human pluripotent stem cells (Hu & Zhang; Karumbayaram et al.; Li et al.).
- Promotes differentiation of osteoblasts from human and mouse mesenchymal cells (Beloti et al.; Wu et al. 2002; Wu et al. 2004).
- Inhibits differentiation and maturation of adipocytes from human mesenchymal cells (Fontaine et al.).

References


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