Print Date: Mar 13th 2014

# Certificate of Analysis

www.tocris.com

**Product Name: Purmorphamine** **Catalog No.: 4551** **Batch No.: 1**

CAS Number: 483367-10-8

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

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** $C_{31}H_{32}N_6O_2$

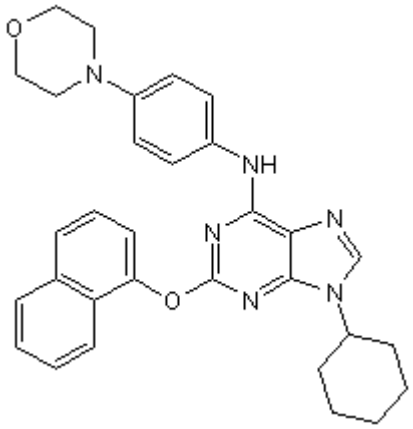
**Batch Molecular Weight:** 520.62

**Physical Appearance:** White solid

**Solubility:** DMSO to 100 mM

**Storage:** Store at -20°C

**Batch Molecular Structure:**



## 2. ANALYTICAL DATA

**HPLC:** Shows 99% purity

**$^1$H NMR:** Consistent with structure

**Mass Spectrum:** Consistent with structure

**Microanalysis:**

| | Carbon | Hydrogen | Nitrogen |
|---|---|---|---|
| Theoretical | 71.52 | 6.19 | 16.14 |
| Found | 71.37 | 6.27 | 16.21 |

**Product Name: Purmorphamine** **Catalog No.: 4551** **Batch No.: 1**

CAS Number: 483367-10-8

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

**Description:**

Smoothened (Smo) receptor agonist ($EC_{50}$ ~ 1 µM). Induces osteogenesis in mouse mesenchymal progenitor cells (C3H10T1/2). When combined with BMP-4 can transdifferentiate pre-adipocytes (3T3-L1) and myoblasts (C2C12) into osteoblasts. Induces differentiation of multipotent mesenchymal progenitor cells into osteoblasts.

**Physical and Chemical Properties:**

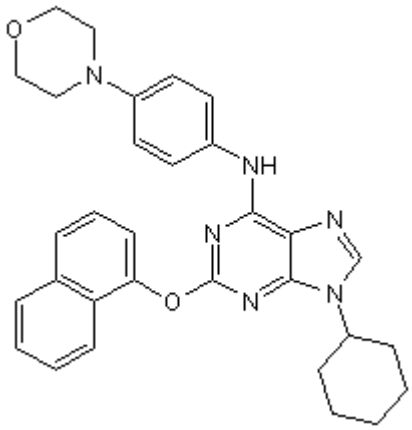
Batch Molecular Formula: $C_{31}H_{32}N_6O_2$

Batch Molecular Weight: 520.62

Physical Appearance: White solid

**Minimum Purity:** >98%

**Batch Molecular Structure:**



**Storage:** Store at -20°C

**Solubility & Usage Info:**

DMSO to 100 mM

**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.

**References:**

**Wu** *et al* (2002) A small molecule with osteogenesis-inducing activity in multipotent mesenchymal progenitor cells. J.Am.Chem.Soc. ***124*** (49) 14520. PMID: 12465946.

**Wu** *et al* (2004) Purmorphamine induces osteogenesis by activation of the hedgehog signaling pathway. Chem.Biol. ***11*** (9) 1229. PMID: 15380183.

**Sinha** *et al* (2006) Purmorphamine activates the Hedgehog pathway by targeting Smoothened. Nat.Chem.Biol. ***2*** (1) 29. PMID: 16408088.