# Product Introduction

## Purmorphamine

Purmorphamine, which directly binds and activates **Smoothened**, blocks BODIPY-cyclopamine binding to Smo with **IC50** of ~ 1.5 μM and also is an inducer of osteoblast differentiation with **EC50** of 1 μM.

### Technical Data:

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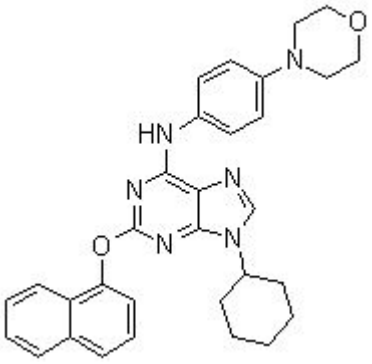
|---|---|---|
| **Molecular Weight (MW):** | 520.62 |  |
| **Formula:** | $C_{31}H_{32}N_6O_2$ | |
| **Solubility (25°C) * <1 mg/ml means slightly soluble or insoluble:** | DMSO 4 mg/mL | |
| | Water <1 mg/mL | |
| | Ethanol <1 mg/mL | |
| **Purity:** | >98% | |
| **Storage:** | 3 years -20℃Powder | |
| | 6 months-80℃in DMSO | |
| **CAS No.:** | 483367-10-8 | |

### Biological Activity

Purmorphamine activates the Hedgehog pathway by directly binds and activates Smoothened with IC50 of ~ 1.5 μM in compete with cyclopamine, a Smo antagonist. [1] Purmorphamine is a potent inducer of osteogenesis in multipotent C3H10T1/2 cells. The EC50 (based on ALP expression) for Purmorphamine is 1 μM in C3H10T1/2 cells. Purmorphamine (1 μM) and BMP-4 (100 ng/mL) together increase ALP activity more than 90-fold in 3T3-L1 cells. [2] In contrast to BMP-4, Purmorphamine induces osteogenesis by activating Hedgehog signaling in multipotent mesenchymal progenitor cells. [3]

Purmorphamine up-regulates ALP expression in human mesenchymal stem cell-based constructs on rats. [4]

## References


[1] Sinha S, et al. Nat Chem Biol, 2006, 2(1), 29-30.

[2] Wu X, et al. J Am Chem Soc, 2002, 124(49), 14520-14521.

[3] Wu X, et al. Chem Biol, 2004, 11(9), 1229-1238.

[4] Faghihi F, Biomed Pharmacother, 2012, 3322(12).

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