

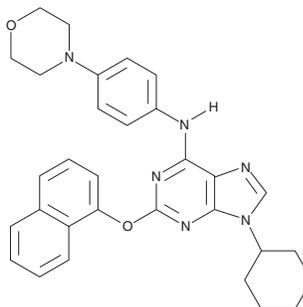
# PRODUCT INFORMATION



## Purmorphamine

Item No. 10009634

**CAS Registry No.:** 483367-10-8  
**Formal Name:** 9-cyclohexyl-N-[4-(morpholinyl)phenyl]-2-(1-naphthalenyloxy)-9H-purin-6-amine  
**MF:** C<sub>31</sub>H<sub>32</sub>N<sub>6</sub>O<sub>2</sub>  
**FW:** 520.6  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 221, 316 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Purmorphamine is supplied as a crystalline solid. A stock solution may be made by dissolving the purmorphamine in the solvent of choice, which should be purged with an inert gas. Purmorphamine is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of purmorphamine in these solvents is approximately 10 and 20 mg/ml, respectively.

Purmorphamine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, purmorphamine should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Purmorphamine has a solubility of approximately 0.25 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Small molecules that promote osteoblast differentiation might be useful as therapeutic agents for bone diseases such as osteoporosis. Purmorphamine is a 2,6,9-trisubstituted purine that promotes the differentiation of both human and mouse mesenchymal progenitor cells into osteoblasts.<sup>1,2</sup> The EC<sub>50</sub> value for differentiation of C3H10T1/2 cells based on alkaline phosphatase expression is 1 μM.<sup>1</sup> Investigation into purmorphamine's mechanism of action indicates that it directly binds to and activates the 7-transmembrane Smo receptor of the Hedgehog signaling pathway.<sup>3,4</sup>

### References

1. Wu, X., Ding, Q., Gray, N.S., *et al.* A small molecule with osteogenesis-inducing activity in multipotent mesenchymal progenitor cells. *J. Am. Chem. Soc.* **124**, 14520-14521 (2002).
2. Beloti, M.M., Bellesini, L.S., and Rosa, A.L. Purmorphamine enhances osteogenic activity of human osteoblasts derived from bone marrow mesenchymal cells. *Cell Biol. Int.* **29(7)**, 537-541 (2005).
3. Wu, X., Walker, J., Zhang, J., *et al.* Purmorphamine induces osteogenesis by activation of the hedgehog signaling pathway. *Chem. Biol.* **11**, 1229-1238 (2004).
4. Sinha, S. and Chen, J.K. Purmorphamine activates the hedgehog pathway by targeting smoothened. *Nat. Chem. Biol.* **2(1)**, 29-30 (2006).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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