Purmorphamine is an agonist at Smoothened (Smo) receptors; it stimulates activity in the Hedgehog signaling pathway. Purmorphamine displays neuroprotective, pro-angiogenic, and anti-osteoporotic activities. In mesenchymal stem cells, this compound decreases proliferation, increases alkaline phosphatase activity, and accelerates osteogenesis. In animal models of stroke, purmorphamine restores neurological deficits, decreases neuronal apoptosis, and increases neovascularization. Purmorphamine also inhibits the induction of autophagy in hepatocellular carcinoma cells.

References
