Small Molecules

Reversine

Adenosine receptor, non-muscle myosin II (NM II), MEK1, and aurora kinase inhibitor

Catalog #	72612	1 mg
	72614	5 mg

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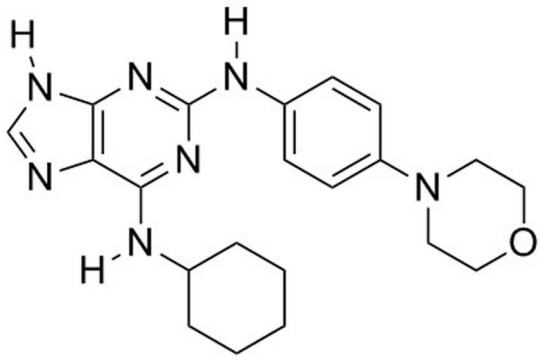
Product Description

Reversine is a 2,6-disubstituted purine derivative that was identified using a screening system based on the loss of terminal differentiation markers in C2C12 myoblast cells (Chen et al. 2004). Reversine has been shown to inhibit the human A3 adenosine receptor, nonmuscle myosin II heavy chain, mitogen activated extra-cellular signal regulated kinase-1 (MEK1), and Aurora B kinase (Chen et al. 2007; Perreira et al.; D'Alise et al.).

Molecular Name:	Reversine
Alternative Names:	Not applicable
CAS Number:	656820-32-5
Chemical Formula:	$C_{21}H_{27}N_7O$
Molecular Weight:	393.5 g/mol
Purity:	> 98%
Chemical Name:	N6-cyclohexyl-N2-[4-(4-morpholinyl)phenyl]-1H-purine-2,6-diamine
Structure:	



Properties

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 ≤ 25 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 254 µL of 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

REPROGRAMMING
· Induces dedifferentiation of lineage-committed murine myoblasts to multipotent progenitors with osteogenic and adipogenic potential (Chen et al., 2007; Chen et al., 2004).
· Induces dedifferentiation of primary mouse and human dermal fibroblasts to myogenic-competent cells (Anastasia et al.).
· Induces dedifferentiation of annulus fibrosus cells to multipotent mesenchymal progenitors that have the potential to develop along chondrogenic, osteogenic, or adipogenic lineages (Saraiya et al.).
CANCER RESEARCH
· Inhibits cell proliferation and induces polyploidy in the PC-3, HeLa, CWR22Rv1, and DU-145 cancer cell lines (Hsieh et al.).
· Induces differentiation in the human embryonal carcinoma cell line NT2, and in the human promyelocytic leukemia cell line HL60 (D'Alise et al.).
· Blocks proliferation, causes failure of cytokinesis, and induces polyploidy in multiple cancer cell lines (D'Alise et al.).

References

Anastasia L et al. (2006) Reversine-treated fibroblasts acquire myogenic competence in vitro and in regenerating skeletal muscle. Cell Death Differ 13(12): 2042–51.
Chen S et al. (2004) Dedifferentiation of lineage-committed cells by a small molecule. J Am Chem Soc 126(2): 410–1.
Chen S et al. (2007) Reversine increases the plasticity of lineage-committed mammalian cells. Proc Natl Acad Sci USA 104(25): 10482–7.
D'Alise AM et al. (2008) Reversine, a novel Aurora kinases inhibitor, inhibits colony formation of human acute myeloid leukemia cells. Mol Cancer Ther 7(5): 1140–9.
Hsieh T-C et al. (2007) The 2,6-disubstituted purine reversine induces growth arrest and polyploidy in human cancer cells. Int J Oncol 31(6): 1293–300.
Perreira M et al. (2005) "Reversine" and its 2-substituted adenine derivatives as potent and selective A3 adenosine receptor antagonists. J Med Chem 48(15): 4910–8.
Saraiya M et al. (2010) Reversine enhances generation of progenitor-like cells by dedifferentiation of annulus fibrosus cells. Tissue Eng Part A 16(4): 1443–55.

Related Small Molecules

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).