Small Molecules

IQ-1

WNT pathway activator; Inhibits protein phosphatase PP2A

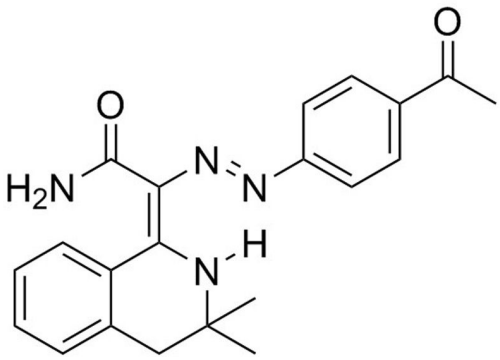
Catalog # 72772 5 mg
72774 25 mg

STEMCELL™ TECHNOLOGIES
Scientists Helping Scientists™ | WWW.STEMCELL.COM
TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713
INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM
FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

Product Description

IQ-1 selectively inhibits p300-dependent β-catenin signaling. IQ-1 is a cell-permeable tetrahydroisoquinolinylidene that binds to the PR72/130 subunit of protein phosphatase PP2A, leading to decreased phosphorylation of the β-catenin coactivator, p300, and decreased affinity of p300 for β-catenin. IQ-1 thereby inhibits β-catenin/p300 interaction while increasing β-catenin/CBP mediated transcription (Miyabayashi et al.).

Molecular Name:	IQ-1
Alternative Names:	Not applicable
CAS Number:	331001-62-8
Chemical Formula:	$C_{21}H_{22}N_4O_2$
Molecular Weight:	362.4 g/mol
Purity:	≥ 98%
Chemical Name:	2-[2-(4-acetylphenyl)diazenyl]-2-(3,4-dihydro-3,3-dimethyl-1(2H)-isoquinolinylidene)-acetamide
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. For product expiry date, please contact techsupport@stemcell.com.
Solubility:	· Absolute ethanol ≤ 25 mM · DMSO ≤ 65 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 276 µL of fresh 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

MAINTENANCE AND SELF-RENEWAL
· Used with Wnt3a to maintain pluripotency of mouse embryonic stem (ES) cells in the absence of mouse embryonic fibroblasts (MEFs), serum, or exogenous leukemia inhibitory factor (LIF; Miyabayashi et al.).
· Enhances expansion of mouse ES-derived cardiovascular progenitor cells (Schenke-Layland et al.).
CANCER RESEARCH
· Induces the conversion of cancer cells to a side population of cancer stem-like cells with high levels of drug resistance and tumorigenicity (He et al.).

References

He K et al. (2014) Cancer cells acquire a drug resistant, highly tumorigenic, cancer stem-like phenotype through modulation of the PI3K/Akt/β-catenin/CBP pathway. Int J Cancer 134(1): 43–54.
Miyabayashi T et al. (2007) Wnt/beta-catenin/CBP signaling maintains long-term murine embryonic stem cell pluripotency. Proc Natl Acad Sci U S A 104(13): 5668–73.
Schenke-Layland K et al. (2011) Recapitulation of the embryonic cardiovascular progenitor cell niche. Biomaterials 32(11): 2748–56.

Related Small Molecules

For a complete list of small molecules available from STEMCELL Technologies, please visit our website at www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

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