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LY294002

PI3K/AKT pathway inhibitor;
Inhibits PI3K

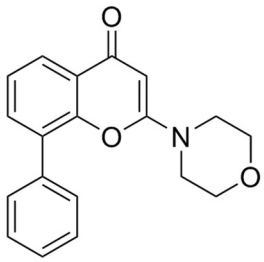
Catalog #72152	5 mg
Catalog #72154	25 mg

Product Description

LY294002 is a PI3K inhibitor that has greater potency and selectivity than quercetin, the structure on which it is based. LY294002 inhibits PI3K (IC_{50} = 1.4 µM) and also shows activity against CK2, but not PI4K, EGFR, PDGFR, MAPK, PKA, or PKC. (Davies et al.; Vlahos et al.)

Alternative Names:	Not applicable
CAS Number (Model):	154447-36-6
Chemical Formula:	$C_{19}H_{17}NO_3$
Molecular Weight:	307.3 g/mol
Purity:	≥ 98%
Chemical Name:	2-(4-morpholinyl)-8-phenyl-4H-1-benzopyran-4-one

Structure:



Properties

Product Format: A crystalline solid

Stability and Storage: Product stable at -20°C as supplied. As a precaution, STEMCELL recommends storing all small molecules away from direct light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.

Preparation: Solubility:
· DMSO ≤ 50 mM
· Absolute ethanol ≤ 50 mM
· PBS (pH 7.2) ≤ 160 µM
For example, to prepare a 10 mM stock solution in DMSO, resuspend 5 mg in 1.63 mL of fresh DMSO.

Prepare stock solution fresh before use. Stock solutions in DMSO or ethanol are stable for up to 6 months if stored 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 or absolute ethanol concentration above 0.1% due to potential cell toxicity.

Published Applications

MAINTENANCE AND SELF-RENEWAL
· Suppresses proliferation and self-renewal of mouse embryonic stem (ES) cells (Lianguzova et al.; Paling et al.).
DIFFERENTIATION
· Promotes differentiation to insulin-producing cells from mouse ES cells (Hori et al.).
· Inhibits myotube formation from myoblasts (Coolican et al.; Jiang et al.).

References

Coolican SA et al. (1997) The mitogenic and myogenic actions of insulin-like growth factors utilize distinct signaling pathways. J Biol Chem 272 (10): 6653–62.

Davies SP et al. (2000) Specificity and mechanism of action of some commonly used protein kinase inhibitors. Biochem J 351(Pt 1): 95–105.

Hori Y et al. (2002) Growth inhibitors promote differentiation of insulin-producing tissue from embryonic stem cells. Proc Natl Acad Sci USA 99 (25): 16105–10.

Jiang BH et al. (1998) An essential role of phosphatidylinositol 3-kinase in myogenic differentiation. Proc Natl Acad Sci USA 95(24): 14179–83.

Lianguzova MS et al. (2007) Phosphoinositide 3-kinase inhibitor LY294002 but not serum withdrawal suppresses proliferation of murine embryonic stem cells. Cell Biol Int 31(4): 330–7.

Paling NRD et al. (2004) Regulation of embryonic stem cell self-renewal by phosphoinositide 3-kinase-dependent signaling. J Biol Chem 279(46): 48063–70.

Vlahos CJ et al. (1994) A specific inhibitor of phosphatidylinositol 3-kinase, 2-(4-morpholinyl)-8-phenyl-4H-1-benzopyran-4-one (LY294002). J Biol Chem 269(7): 5241–8.

Related Products

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

Warning

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