Wortmannin

PI3K/AKT pathway inhibitor; Inhibits PI3K and PLKs

Catalog #  73562  1 mg
            73564  10 mg

Product Description

Wortmannin is a fungal metabolite that covalently binds to and inhibits phosphatidylinositol-3-kinases (PI3K) of class I, II, and III. Species-specific differences in the class II PI3Ks determine sensitivity with IC\(_{50}\) = 5, 50, and 450 nM for Drosophila, mouse, and human, respectively (Fruman et al.; Wymann et al.; Okada et al.). Wortmannin also inhibits polo-like kinases (PLK) PLK1 and PLK3 with IC\(_{50}\) = 24 and 49 nM, respectively (Liu et al. 2005; Liu et al. 2007). At high concentrations it can also inhibit other kinases such as mammalian target of rapamycin (mTOR), DNA-dependent protein kinase catalytic subunit (DNA-PKcs), phosphatidylinositol-4-kinase (PI4K), myosin light-chain kinase (MLCK), and mitogen-activated protein kinase (MAPK; Fruman et al.; Meyers & Cantley; Hartley et al.; Brunn et al.; Nakanishi et al.).

Structure:

![Structure of Wortmannin](image)

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:
- DMSO ≤ 30 mM
- Absolute ethanol ≤ 0.3 mM

For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 233 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

CANCER RESEARCH

- Exhibits cytotoxic activity on a number of human tumor cell lines in vitro, and anti-tumor activity in mouse xenografts of C3H mammary carcinoma and BxPC-3 pancreatic carcinoma cells (Schultz et al.; Yuan et al.).

References


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).