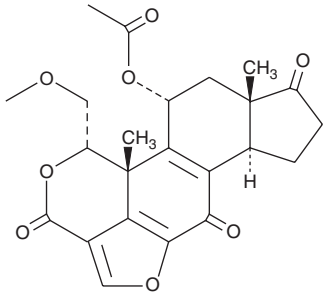
PRODUCT INFORMATION

Wortmannin

Item No. 10010591

CAS Registry No.:	19545-26-7
Formal Name:	11-(acetyloxy)-1S,6bR,7,8,9aS,10,11R,11bR-octahydro-1-(methoxymethyl)-9a,11b-dimethyl-3H-furo[4,3,2-de]indeno[4,5-h]-2-benzopyran-3,6,9-trione
Synonym:	KY 12420
MF:	$C_{23}H_{24}O_8$
FW:	428.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 257, 292 nm
Supplied as:	A cystalline solid
Storage:	-20°C
Stability:	≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Wortmannin is supplied as a crystalline solid. A stock solution may be made by dissolving the wortmannin in an organic solvent purged with an inert gas. Wortmannin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of wortmannin in ethanol is approximately 0.15 mg/ml and approximately 14 mg/ml in DMSO and DMF.

Wortmannin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, wortmannin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Wortmannin has a solubility of approximately 0.1 mg/ml in a 1:8 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day

Description

By phosphorylating phosphatidylinositol, phosphoinositide 3-kinases (PI3K), activates diverse cellular functions, including cell growth, differentiation, survival, and motility. Wortmannin is a potent, cell-permeable, and irreversible inhibitor of PI3K enzymes (IC_{50} = 1-10 nM). However, the class II PI3Ks from *Drosophila*, murine, and human differ in sensitivity to wortmannin (IC_{50}s = 5, 50, 450 nM, respectively).[1] Wortmannin also inhibits polo-like kinase 1 (IC_{50} = 24 nM) and polo-like kinase 3 (IC_{50} = 49 nM), as well as mTOR, DNA-PK, PI4K, MLCK, and p38 MAPK at 50 to 100 fold higher concentrations than that needed for PI3K inhibition.[2,3]

References

1. Fruman, D.A., Meyers, R.E., and Cantley, L.C. Phosphoinositide kinases. *Annu. Rev. Biochem.* **67**, 481-507 (2008).
2. Liu, Y., Shreder, K.R., Gai, W., *et al.* Wortmannin, a widely used phosphoinositide 3-kinase inhibitor, also potently inhibits mammalian polo-like kinase. *Chemistry and Biology* **12**, 99-107 (2005).
3. Liu, Y., Jiang, N., Wu, J., *et al.* Polo-like kinases inhibited by wortmannin. Labeling site and downstream effects. *J. Biol. Chem.* **282(4)**, 2505-2511 (2007).

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