Small Molecules

KP372-1

PI3K/AKT pathway inhibitor; Inhibits AKT

Catalog # 73222

10 mg

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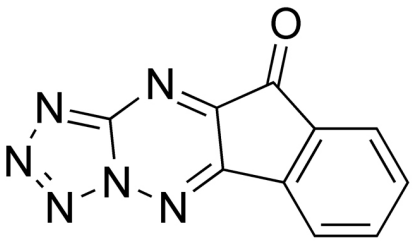
Product Description

KP372-1 is a specific inhibitor of AKT, inhibiting phosphorylation of AKT and its downstream targets. It demonstrates at least 10-fold selectivity for AKT versus other kinase targets, including CDK1, ERK1, GSK3β, LCK, MEK1, PKA, PKC, and S6K (Mandal et al. 2005; Zeng et al.; Koul et al.).

Molecular Name:	KP372-1
Alternative Names:	KP372-1A
CAS Number:	329710-24-9
Chemical Formula:	$C_{10}H_4N_6O$
Molecular Weight:	224.2 g/mol
Purity:	≥ 95%
Chemical Name:	10H-indeno[2,1-e]tetrazolo[1,5-b][1,2,4]triazin-10-one
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:	· DMSO ≤ 130 mM For example, to prepare a 100 mM stock solution in DMSO, resuspend 10 mg in 446 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
· Inhibits proliferation and induces apoptosis in a variety of human cancer cells including squamous cell carcinoma of the head and neck, thyroid cancer cells, and glioblastoma (Mandal et al. 2005; Mandal et al. 2006; Koul et al.).
· Inhibits the kinase activity of AKT, PDK1, and FLT3, and decreases the colony-forming ability of acute myelogenous leukemia cells (Zeng et al.).

References

Koul D et al. (2006) Inhibition of Akt survival pathway by a small-molecule inhibitor in human glioblastoma. Mol Cancer Ther 5(3): 637–44.
Mandal M et al. (2006) The Akt inhibitor KP372-1 inhibits proliferation and induces apoptosis and anoikis in squamous cell carcinoma of the head and neck. Oral Oncol 42(4): 430–9.
Mandal M et al. (2005) The Akt inhibitor KP372-1 suppresses Akt activity and cell proliferation and induces apoptosis in thyroid cancer cells. Br J Cancer 92(10): 1899–1905.
Zeng Z et al. (2006) Simultaneous inhibition of PDK1/AKT and Fms-like tyrosine kinase 3 signaling by a small-molecule KP372-1 induces mitochondrial dysfunction and apoptosis in acute myelogenous leukemia. Cancer Res 66(7): 3737–46.

Related Small Molecules

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