

Small Molecules

AZD8055

mTOR pathway inhibitor; Inhibits mTOR

Catalog # 73002
73004

1 mg
10 mg



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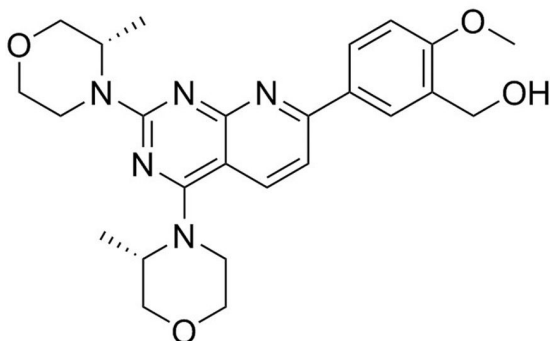
INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

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Product Description

AZD8055 is a potent, selective ATP-competitive inhibitor of mammalian target of rapamycin (mTOR), with an IC_{50} value of 0.8 nM (Chresta et al.). It is very specific, with ~1,000-fold selectivity for mTOR over all PI3K isoforms and exhibits no activity against a panel of 260 kinases at concentrations up to 10 μ M (Chresta et al.).

Molecular Name: AZD8055
Alternative Names: CCG-168
CAS Number: 1009298-09-2
Chemical Formula: $C_{25}H_{31}N_5O_4$
Molecular Weight: 465.5 g/mol
Purity: $\geq 98\%$
Chemical Name: 5-[2,4-bis[(3S)-3-methyl-4-morpholinyl]pyrido[2,3-d]pyrimidin-7-yl]-2-methoxy-benzenemethanol
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 ≤ 2 mM
· Absolute ethanol ≤ 1 mM
For example, to prepare a 1 mM stock solution in DMSO, resuspend 1 mg in 2.15 mL 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 of A549 and H838 small-cell lung cancer cell lines in vitro, and inhibits tumor growth from a variety of human tumor xenografts in mice after oral administration (Chresta et al.).
- Inhibits cell proliferation, increases cell death and reduces migration in tamoxifen-resistant (TamR) and estrogen deprivation-resistant (MCF7-X) breast cancer cell lines (Jordan et al.).
- Induces apoptosis and inhibits proliferation in Hep-2, a human laryngeal cancer cell line (Zhao et al.).
- In combination with ABT-737, synergistically induces apoptosis in rhabdomyosarcoma (RMS) cells by suppressing expression of myeloid leukemia cell differentiation protein (MCL1; Preuss et al.).
- Inhibits proliferation and glycolysis, and induces apoptosis, in HeLa human cervical cancer cell line (Li et al.).

References

- Chresta CM et al. (2010) AZD8055 is a potent, selective, and orally bioavailable ATP-competitive mammalian target of rapamycin kinase inhibitor with in vitro and in vivo antitumor activity. *Cancer Res* 70(1): 288–98.
- Jordan NJ et al. (2014) Impact of dual mTORC1/2 mTOR kinase inhibitor AZD8055 on acquired endocrine resistance in breast cancer in vitro. *Breast Cancer Res* 16(1): R12.
- Li S et al. (2013) The mTOR inhibitor AZD8055 inhibits proliferation and glycolysis in cervical cancer cells. *Oncol Lett* 5(2): 717–21.
- Preuss E et al. (2013) Pan-mammalian target of rapamycin (mTOR) inhibitor AZD8055 primes rhabdomyosarcoma cells for ABT-737-induced apoptosis by down-regulating Mcl-1 protein. *J Biol Chem* 288(49): 35287–96.
- Zhao L et al. (2014) mTOR inhibitor AZD8055 inhibits proliferation and induces apoptosis in laryngeal carcinoma. *Int J Clin Exp Med* 7(2): 337–47.

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