

Small Molecules

PD173074

Tyrosine kinase inhibitor; Inhibits FGFR

Catalog # 72162
72164

1 mg
10 mg



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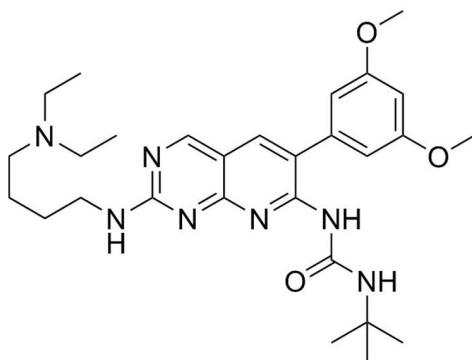
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Product Description

PD173074 is a selective and potent, ATP-competitive inhibitor of fibroblast growth factor receptor (FGFR). It acts on both FGFR3 and FGFR1 (IC_{50} = 5 and 21.5 nM respectively), and also inhibits FGFR2, FGFR4 and vascular endothelial growth factor receptor 2 (VEGFR2). It is approximately 1000 times more potent than another common FGFR inhibitor SU5402 (Catalog #73912). PD173074 shows little to no activity against PDGFR, EGFR, MEK, or PKC (Koziczak et al.; Mohammadi et al.; Trudel et al.).

Molecular Name:	PD173074
Alternative Names:	Not applicable
CAS Number:	219580-11-7
Chemical Formula:	$C_{28}H_{41}N_7O_3$
Molecular Weight:	523.7 g/mol
Purity:	≥ 98%
Chemical Name:	N-[2-[[4-(diethylamino)butyl]amino]-6-(3,5-dimethoxyphenyl)pyrido[2,3-d]pyrimidin-7-yl]-N'-(1,1-dimethylethyl)-urea

Structure:



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 20 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 190 µL of fresh 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

MAINTENANCE AND SELF-RENEWAL

- Suppresses the differentiation of mouse ES cells and maintains the undifferentiated state (Kunath et al.; Ying et al.).

REPROGRAMMING

- Prevents excision-mediated differentiation of mouse induced pluripotent stem cells generated using piggyBac transposons (Kaji et al.).
- Promotes reprogramming of human embryonic stem (ES) cells to naïve cells, or their maintenance in a naïve state, in combination with with OCT4, KLF4, KLF2, LIF (Catalog #78055), CHIR99021 (Catalog #72052), and PD0325901 (Catalog #72182) (Hanna et al.).

DIFFERENTIATION

- Blocks neural differentiation of mouse ES cells (Stavridis et al.).
- Promotes differentiation of human ES cells, but not when they are in a naïve or ground state (Hanna et al.).

References

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- Koziczak M et al. (2004) Blocking of FGFR signaling inhibits breast cancer cell proliferation through downregulation of D-type cyclins. *Oncogene* 23(20): 3501–8.
- Kunath T et al. (2007) FGF stimulation of the Erk1/2 signalling cascade triggers transition of pluripotent embryonic stem cells from self-renewal to lineage commitment. *Development* 134(16): 2895–902.
- Mohammadi M et al. (1998) Crystal structure of an angiogenesis inhibitor bound to the FGF receptor tyrosine kinase domain. *EMBO J* 17(20): 5896–904.
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- Trudel S et al. (2004) Inhibition of fibroblast growth factor receptor 3 induces differentiation and apoptosis in t(4;14) myeloma. *Blood* 103(9): 3521–8.
- Ying Q-L et al. (2008) The ground state of embryonic stem cell self-renewal. *Nature* 453(7194): 519–23.

Related Small Molecules

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