Small Molecules

Pluripotin

PI3K and MEK/ERK pathway inhibitor;
Inhibits RasGAP and ERK1

Catalog #	72812	1 mg
	72814	10 mg

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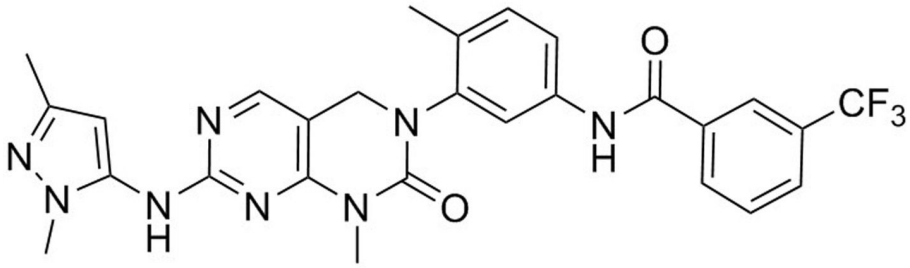
Product Description

Pluripotin inhibits both Ras GTPase-activating protein (RasGAP, Kd = 98 nM) and extracellular signal-regulated kinase 1 (ERK1, Kd = 212 nM; Chen et al.). Inhibition of RasGAP increases Ras signaling via the PI3-kinase pathway which promotes self-renewal, whereas inhibition of ERK1 blocks differentiation (Chen et al.).

Molecular Name:	Pluripotin
Alternative Names:	SC-1
CAS Number:	839707-37-8
Chemical Formula:	$C_{27}H_{25}F_3N_8O_2$
Molecular Weight:	550.5 g/mol
Purity:	≥ 98%
Chemical Name:	N-(3-(7-(1,3-dimethyl-1H-pyrazol-5-ylamino)-1-methyl-2-oxo-1,2-dihydropyrimido[4,5-d]pyrimidin-3(4H)-yl)-4-methylphenyl)-3-(trifluoromethyl)benzamide
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 ≤ 45 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 182 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
· Promotes self-renewal and maintains mouse embryonic stem (ES) cells in an undifferentiated, pluripotent state in the absence of feeder cells, serum and leukemia inhibitory factor (LIF) for at least 10 passages (Chen et al.; Xiong et al.).
· When combined with LIF, improves efficiency of ES cell derivation from refractory mouse strains (Pieters et al.; Yang et al.).

References

Chen S et al. (2006) Self-renewal of embryonic stem cells by a small molecule. Proc Natl Acad Sci U S A 103(46): 17266–71.
Pieters T et al. (2012) Efficient and user-friendly pluripotin-based derivation of mouse embryonic stem cells. Stem Cell Rev 8(3): 768–78.
Xiong W et al. (2009) The use of SC1 (Pluripotin) to support mESC self-renewal in the absence of LIF. J Vis Exp (33).
Yang W et al. (2009) Pluripotin combined with leukemia inhibitory factor greatly promotes the derivation of embryonic stem cell lines from refractory strains. Stem Cells 27(2): 383–9.

Related Small Molecules

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