

# Small Molecules

PD0325901

MEK/ERK pathway inhibitor; Inhibits MEK

Catalog # 72182  
72184

1 mg  
10 mg



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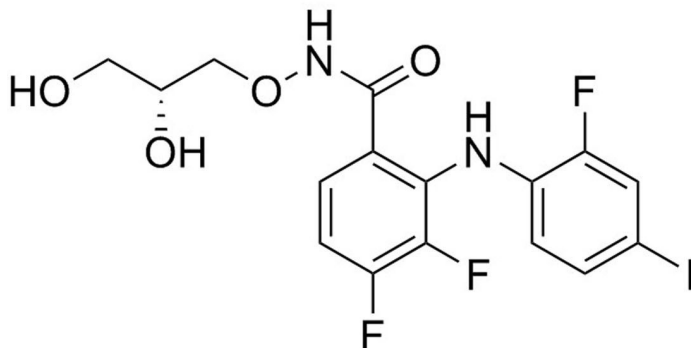
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## Product Description

PD0325901 is a selective, cell permeable inhibitor of the MEK/ERK pathway that inhibits the activation and downstream signaling of MEK. It is an extremely potent inhibitor, suppressing the phosphorylation of ERK in C26 cells at very low concentrations ( $IC_{50} = 0.33$  nM; Bain et al.; Barrett et al.).

Molecular Name:	PD0325901
Alternative Names:	Not applicable
CAS Number:	391210-10-9
Chemical Formula:	$C_{16}H_{14}F_3IN_2O_4$
Molecular Weight:	482.2 g/mol
Purity:	≥ 98%
Chemical Name:	N-[(2R)-2,3-dihydroxypropoxy]-3,4-difluoro-2-[(2-fluoro-4-iodophenyl)amino]-benzamide
Structure:	



## Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at $-20^{\circ}C$ as supplied. Protect from prolonged exposure to light. For product expiry date, please contact <a href="mailto:techsupport@stemcell.com">techsupport@stemcell.com</a> .
Solubility:	· DMSO $\leq 50$ mM · Absolute ethanol $\leq 40$ mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 207 $\mu$ L 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  $-20^{\circ}C$ . 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

- Maintains undifferentiated mouse embryonic stem (ES) cells, in combination with CHIR99021, in the absence of LIF (Ying et al.).
- Allows derivation and maintenance of rat ES cells (Buehr et al., Li P et al.).

### REPROGRAMMING

- Add at the later stages of reprogramming to select for and expand fully reprogrammed mouse induced pluripotent (iPS) cells (Shi et al., Silva et al.).
- Increases the efficiency of reprogramming human somatic cells to iPS cells, in combination with SB431542 and Thiazovivin (Lin et al.).
- Promotes reprogramming of human somatic cells to iPS cells using only a single factor, OCT4 (Zhu et al.).
- Generates mouse-like or “ground state” iPS cells from human and rat somatic cells, in combination with CHIR99021 and A83-01 (Li W et al.).

## References

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- Buehr M et al. (2008) Capture of authentic embryonic stem cells from rat blastocysts. *Cell* 135(7): 1287–98.
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- Li W et al. (2009) Generation of rat and human induced pluripotent stem cells by combining genetic reprogramming and chemical inhibitors. *Cell Stem Cell* 4(1): 16–9.
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- Ying Q-L et al. (2008) The ground state of embryonic stem cell self-renewal. *Nature* 453(7194): 519–23.
- Zhu S et al. (2010) Reprogramming of human primary somatic cells by OCT4 and chemical compounds. *Cell Stem Cell* 7(6): 651–5.

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