Small Molecules

PD0325901

MEK/ERK pathway inhibitor; Inhibits MEK

Catalog #	72182	1 mg
	72184	10 mg

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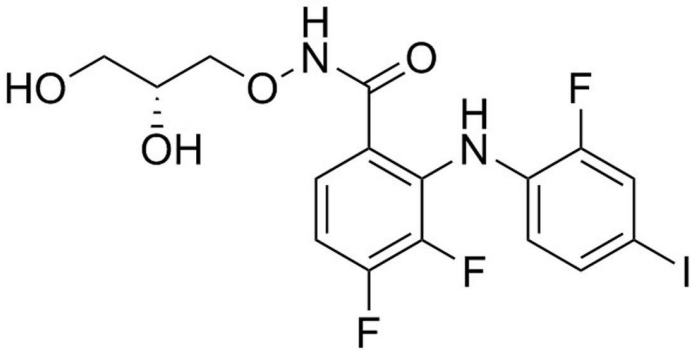
Product Description

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°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 50 mM · Absolute ethanol ≤ 40 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 207 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
· Maintains undifferentiated mouse embryonic stem (ES) cells, in combination with CHIR99021 (Catalog #72052), 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 stem (iPS) cells (Shi et al.; Silva et al.).
· Increases the efficiency of reprogramming human somatic cells to iPS cells, in combination with SB431542 (Catalog #72232) and Thiazovivin (Catalog #72252) (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 A 83-01 (Catalog #72202) (Li W et al.).

References

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Barrett SD et al. (2008) The discovery of the benzhydroxamate MEK inhibitors CI-1040 and PD 0325901. Bioorg Med Chem Lett 18(24): 6501–4.
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Zhu S et al. (2010) Reprogramming of human primary somatic cells by OCT4 and chemical compounds. Cell Stem Cell 7(6): 651–5.

Related Small Molecules

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