

Small Molecules

PD98059

MEK/ERK pathway inhibitor; Inhibits MEK1 and MEK2

Catalog # 72172
72174

1 mg
5 mg



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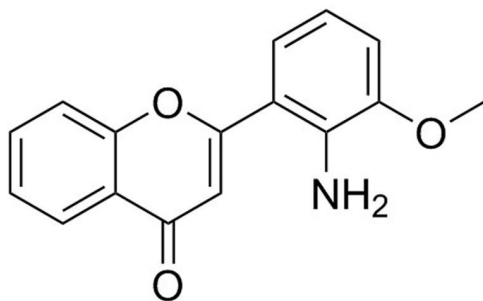
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Product Description

PD98059 is a selective, cell permeable inhibitor of the MEK/ERK pathway that acts by preventing the activation of MEK1 ($IC_{50} = 2 - 7 \mu M$) and MEK2 ($IC_{50} = 50 \mu M$) by upstream kinases. It does not inhibit activated MEK, or the p38 MAPK pathway (Alessi et al.; Davies et al.; Dudley et al.).

Molecular Name:	PD98059
Alternative Names:	Not applicable
CAS Number:	167869-21-8
Chemical Formula:	$C_{16}H_{13}NO_3$
Molecular Weight:	267.3 g/mol
Purity:	$\geq 98\%$
Chemical Name:	2-(2-amino-3-methoxyphenyl)-4H-1-benzopyran-4-one
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 techsupport@stemcell.com .
Solubility:	<ul style="list-style-type: none">· DMSO ≤ 70 mM· Absolute ethanol ≤ 1.8 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 374 μL 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 $-20^{\circ}C$. 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

- Enhances the growth and self-renewal of mouse embryonic stem (ES) cells (Burdon et al.; Qi et al.).
- Permits derivation of mouse ES cells from the refractory CBA mouse strain (Buehr and Smith).

DIFFERENTIATION

- Blocks the differentiation of mouse ES cells (Burdon et al.).
- Enhances adipogenic differentiation and blocks osteogenic differentiation of human mesenchymal stem cells (Jaiswal et al.).

CANCER RESEARCH

- Decreases number of AML blast colonies with minimal effect on normal hematopoietic progenitors (Milella et al.).

References

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- Davies SP et al. (2000) Specificity and mechanism of action of some commonly used protein kinase inhibitors. *Biochem J* 351(Pt 1): 95–105.
- Dudley DT et al. (1995) A synthetic inhibitor of the mitogen-activated protein kinase cascade. *Proc Natl Acad Sci U S A* 92(17): 7686–9.
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- Milella M et al. (2001) Therapeutic targeting of the MEK/MAPK signal transduction module in acute myeloid leukemia. *J Clin Invest* 108(6): 851–9.
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Related Small Molecules

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