Small Molecules

RG108

Epigenetic modifier; Inhibits DNA methyltransferase (DNMT)

Catalog #	72212	5 mg
	72214	10 mg

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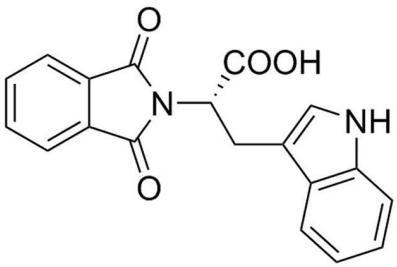
Product Description

RG108 is an epigenetic modifier that inhibits DNA methyltransferase (IC_{50} = 115 nM). RG108 is a non-nucleoside inhibitor that acts by direct binding to the methyltransferase enzyme whereby it blocks the enzyme active site (Brueckner et al.; Stresemann et al.).

Molecular Name:	RG108
Alternative Names:	N-Phthalyl-L-Tryptophan
CAS Number:	48208-26-0
Chemical Formula:	$C_{19}H_{14}N_2O_4$
Molecular Weight:	334.3 g/mol
Purity:	≥ 98%
Chemical Name:	α-(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)-(αS)-1H-indole-3-propanoic acid
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 ≤ 90 mM · Absolute ethanol ≤ 150 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 5 mg in 1.50 mL 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

REPROGRAMMING
· Enhances reprogramming efficiency of human and mouse somatic cells to induced pluripotent stem (iPS) cells (Mali et al.; Pasha et al.; Shi et al.).

References

Brueckner B et al. (2005) Epigenetic reactivation of tumor suppressor genes by a novel small-molecule inhibitor of human DNA methyltransferases. Cancer Res 65(14): 6305–11.
Mali P et al. (2010) Butyrate greatly enhances derivation of human induced pluripotent stem cells by promoting epigenetic remodeling and the expression of pluripotency-associated genes. Stem Cells 28(4): 713–20.
Pasha Z et al. (2011) Efficient non-viral reprogramming of myoblasts to stemness with a single small molecule to generate cardiac progenitor cells. PLoS One 6(8): e23667.
Shi Y et al. (2008) Induction of pluripotent stem cells from mouse embryonic fibroblasts by Oct4 and Klf4 with small-molecule compounds. Cell Stem Cell 3(5): 568–74.
Stresemann C et al. (2006) Functional diversity of DNA methyltransferase inhibitors in human cancer cell lines. Cancer Res 66(5): 2794–800.

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