

# Small Molecules

RG108

Epigenetic modifier; Inhibits DNA methyltransferase (DNMT)

Catalog # 72212  
72214

5 mg  
10 mg



Scientists Helping Scientists™ | WWW.STEMCELL.COM

TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

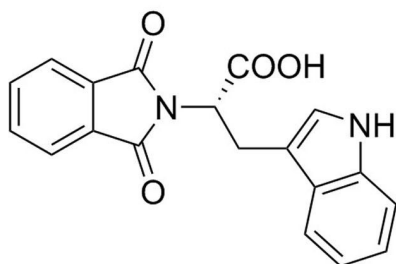
INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

## Product Description

RG108 is an epigenetic modifier that inhibits DNA methyltransferase ( $IC_{50} = 115 \text{ nM}$ ). 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:	$\geq 98\%$
Chemical Name:	$\alpha$ -(1,3-dihydro-1,3-dioxo-2H-isoindol-2-yl)-( $\alpha$ S)-1H-indole-3-propanoic acid
Structure:	



## Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at $-20^{\circ}\text{C}$ as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO $\leq 90 \text{ mM}$ · Absolute ethanol $\leq 150 \text{ mM}$ 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  $-20^{\circ}\text{C}$ . 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.

## Related Small Molecules

For a complete list of small molecules available from STEMCELL Technologies, visit [www.stemcell.com/smallmolecules](http://www.stemcell.com/smallmolecules) or contact us at [techsupport@stemcell.com](mailto:techsupport@stemcell.com).

STEMCELL TECHNOLOGIES INC.'S QUALITY MANAGEMENT SYSTEM IS CERTIFIED TO ISO 13485. PRODUCTS ARE FOR RESEARCH USE ONLY AND NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES UNLESS OTHERWISE STATED.

Copyright © 2017 by STEMCELL Technologies Inc. All rights reserved including graphics and images. STEMCELL Technologies & Design, STEMCELL Shield Design, and Scientists Helping Scientists are trademarks of STEMCELL Technologies Canada Inc. All other trademarks are the property of their respective holders. While STEMCELL has made all reasonable efforts to ensure that the information provided by STEMCELL and its suppliers is correct, it makes no warranties or representations as to the accuracy or completeness of such information.