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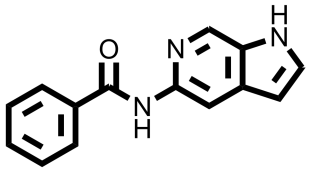
Oct4 Activator – OAC1

Chemical Name: N-(1H-pyrrolo[2,3-c]pyridin-5-yl)benzamide



Molecular Weight:	237.26
Formula:	$C_{14}H_{11}N_3O$
Purity:	≥ 98%
CAS#:	300586-90-7
Solubility:	DMSO up to 100 mM
Storage	Powder: 4°C 1 year DMSO: 4°C 3 month -20°C 1 year

Biological Activity:

OAC1 is a potent and selective small molecule to activate both Oct4 and Nanog promoter-driven luciferase reporter genes, identified from a cell-based high-throughput screening. When added to the reprogramming media along with the four reprogramming factors (Oct4, Sox2, Klf4, and c-Myc), OAC1 can significantly enhance iPSC reprogramming efficiency (20-fold higher than that induced by the 4F alone) and accelerate the reprogramming process. The iPSC colonies derived using OAC1 along with the four factors exhibited typical ESC morphology, gene-expression pattern, and developmental potential. OAC1 seems to enhance reprogramming efficiency in a unique manner, independent of either inhibition of the p53-p21 pathway or activation of the Wnt-β-catenin signaling. OAC1 increases transcription of the Oct4-Nanog-Sox2 triad and Tet1, a gene known to be involved in DNA demethylation. OAC1 may be used for large-scale iPSC generation for various applications.

How to Use:

In vitro: OAC1 was used at 1 μM final concentration in iPSC culture media for 7 days (2 days after viral transduction with the four reprogramming factors).

In vivo: n/a

Reference:

1. Li W, et al. Identification of Oct4-activating compounds that enhance reprogramming efficiency. (2012) Proc Natl Acad Sci USA.109(51):20853-8.