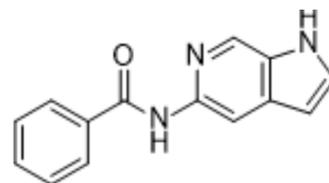


OAC1

Cat. No.:	HY-12303		
CAS No.:	300586-90-7		
Molecular Formula:	C ₁₄ H ₁₁ N ₃ O		
Molecular Weight:	237.26		
Target:	Oct3/4; TET Protein		
Pathway:	Stem Cell/Wnt; Epigenetics		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 40 mg/mL (168.59 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent		Mass		
	Concentration		1 mg	5 mg	10 mg
	1 mM		4.2148 mL	21.0739 mL	42.1479 mL
	5 mM		0.8430 mL	4.2148 mL	8.4296 mL
	10 mM		0.4215 mL	2.1074 mL	4.2148 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (10.54 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (10.54 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (10.54 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

OAC1 is a potent Oct4 activator. OAC1 activates Oct4 and Nanog promoters and enhances induced pluripotent stem cells (iPSC) formation. OAC1 activates OCT4 through upregulation of HOXB4 expression. OAC1 increases transcription of the Oct4-Nanog-Sox2 triad and TET1. OAC1 facilitates the reprogramming of cells by enhancing efficiency and shortening the reprogramming time^{[1][2]}.

IC₅₀ & Target

TET1

In Vitro

OAC1 (10 μ M; 7 d) enhances reprogramming efficiency. OAC1 increases induced pluripotent stem cells (iPSC) generation from mouse embryonic fibroblasts (MEFs) and accelerates the appearance of iPSC-like colonies^[1].
OAC1 (1 μ M; 2 d; human IMR90 fibroblast cells) activates endogenous Oct4, Nanog, Sox2, and Tet1 expression^[1].
OAC1 (500 nM; 4 d; CD34⁺ cells) increases numbers of phenotypic hematopoietic stem cells (HSC) and functional Hematopoietic progenitor cells (HPC)^[2].
OAC1 (500 nM; 4 d; CD34⁺ cells) activates OCT4 through upregulation of HOXB4 expression to expand hematopoietic stem cells (HSC)^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Cell Proliferation Assay^[2]

Cell Line:	CD34 ⁺ cells from human cord blood
Concentration:	500 nM
Incubation Time:	4 days
Result:	Increased the numbers of CD34 ⁺ CD38 ⁻ cells. Increased the number of Lin ⁻ CD34 ⁺ CD38 ⁻ CD45RA ⁻ CD90 ⁺ CD49f ⁺ cells. Increased in the number of phenotypic hematopoietic stem cells (HSC) compared to control vectors. Enhanced expansion of HPC with both full and suboptimal cytokine doses in the expansion and colony forming phases.

In Vivo

OAC1 (50000 CB CD34⁺ cells with OAC1(500 nM); i.h.; 16 weeks) enhances short and long-term engrafting hematopoietic stem cells (HSC) in irradiated NSG mice^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Irradiated NSG mice with OAC1 or vehicle control treated CB CD34 ⁺ cells within 24h after irradiation ^[2]
Dosage:	16 weeks
Administration:	Subcutaneous injection OAC1(500 nM) treated CB CD34 ⁺ cells
Result:	Increased cord blood (CB) cells in primary recipients, compared to the vehicle control group, with the board increase for human B cells, T cells, and myeloid cells in the bone marrow (BM) of primary recipients, resulting in a significant expansion of SRC numbers.

CUSTOMER VALIDATION

- Patent. US20180263995A1.

See more customer validations on www.MedChemExpress.com

REFERENCES

- [1]. Li W, et, al. Identification of Oct4-activating compounds that enhance reprogramming efficiency. Proc Natl Acad Sci U S A. 2012 Dec 18;109(51):20853-8.
- [2]. Huang X, et, al. Activation of OCT4 enhances ex vivo expansion of human cord blood hematopoietic stem and progenitor cells by regulating HOXB4 expression. Leukemia. 2016 Jan;30(1):144-53.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA