Product Data Sheet

Product Name: OAC3
Cat. No.: GC10724

Chemical Properties

Cas. No.	182564-41-6		
Chemical Name	4-fluoro-N-(1H-indol-5-yl)benzamide		
SMILES	O=C(C1=CC=C(C=C1)F)NC2=CC=C3NC=CC3=C2		
Formula	$C_{15}H_{11}FN_2O$	M.Wt	254.26
Solubility	DMF: 20 mg/ml,DMF:PBS(pH 7.2)(1:1): 0.50 mg/ml,DMSO: 16 mg/ml,Ethanol: 12.5 mg/ml	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	OAC3		

Background

OAC3 is identified as an activator of octamer-binding transcription factor 4.

Octamer-binding transcription factor 4 (Oct4), a key regulator of embryonic stem cell (ESC) pluripotency, is cirtical to the reprogramming process.

In vitro: OAC3 was shown to be able to activate both Oct4 and Nanog reporters to a similar extent as OAC1, which was its analog with greatest activating effects on both Oct4 and Nanog promoter-driven luciferase reporter genes. It was also found that both OAC1 and OAC3 could considerably enhance the 4F-induced reprogramming efficiency. Furthermore, OAC1 and OAC3 enhanced reprogramming efficiency four-fold, up to as high as 2.75%, and also accelerated the appearance of iPSC colonies 3 to 4 d when used in combination with the four reprogramming factors, which were Oct4, Sox2, Klf4, and c-Myc [1].

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In vivo: In animal to test the in vivo pluripotency of the 4F+OAC2-induced iPSCs, which was another OAC3 analog, the 4F+OAC2-iPSCs were transplanted the into immunodeficient Nude mice. Results showed that 4 to 6 weeks after transplantation, 4F+OAC2-iPSCs generated typical teratomas containing derivative of three germ layers effectively, such as epidermis of ectoderm, blood of mesoderm, and intestinal epithelia of endoderm [1].

Clinical trial: Up to now, OAC3 is still in the preclinical development stage.

Reference:
[1] Li W,Tian E,Chen ZX,Sun G,Ye P,Yang S,Lu D,Xie J,Ho TV,Tsark WM,Wang C,Horne DA,Riggs AD,Yip ML,Shi Y. Identification of Oct4-activating compounds that enhance reprogramming efficiency. Proc Natl Acad Sci U S A.2012 Dec 18;109(51):20853-8.

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