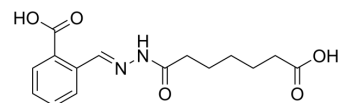


## IDE1

<b>Cat. No.:</b>	HY-100533		
<b>CAS No.:</b>	1160927-48-9		
<b>Molecular Formula:</b>	C <sub>15</sub> H <sub>18</sub> N <sub>2</sub> O <sub>5</sub>		
<b>Molecular Weight:</b>	306.31		
<b>Target:</b>	Organoid		
<b>Pathway:</b>	Stem Cell/Wnt		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



## SOLVENT & SOLUBILITY

### In Vitro

DMSO : ≥ 30 mg/mL (97.94 mM)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent		1 mg	5 mg	10 mg
	Concentration	Mass			
	1 mM		3.2647 mL	16.3233 mL	32.6467 mL
	5 mM		0.6529 mL	3.2647 mL	6.5293 mL
	10 mM		0.3265 mL	1.6323 mL	3.2647 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 (8.16 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
 Solubility: ≥ 2.5 mg/mL (8.16 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
 Solubility: ≥ 2.5 mg/mL (8.16 mM); Clear solution

## BIOLOGICAL ACTIVITY

### Description

IDE1 is an inducer of definitive endoderm 1.

### In Vitro

IDE1 enhances the definitive endoderm (DE) differentiation of human-induced pluripotent stem cells (hiPSCs) with Activin A/Wnt3a being significantly more potent in both 2D and 3D cultures compared to IDE1. IDE1 could efficiently induces DE differentiation through various protocols in vitro. Treatment of the hiPSCs-derived EBs with IDE-1 shows minor increase (p<0.01) of DE-markers cells compared to Activin A/Wnt3a treatment. IDE1 possess several advantages over other inducing factors including high permeability, influence, diversity, low cost, and easy to use and for the first time, Melton's team

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showed that Activin A can be substituted by two cell-permeable small molecules, IDE1 and IDE2. IDE1 could induce phosphorylation of Smad2 after incubation for 24 h or more at levels comparable to those induced by Activin A treatment. Treatment of hiPSCs with IDE1 (2 mM) also leads to endodermal differentiation but with a significantly lower efficiency than Activin A/Wnt3a<sup>[1]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Cell Discov. 2023 Jun 6;9(1):53.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

[1]. Hoveizi E, et al. Definitive endoderm differentiation of human-induced pluripotent stem cells using signaling molecules and IDE1 in three-dimensional polymer scaffold. J Biomed Mater Res A. 2014 Nov;102(11):4027-36.

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

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