

Product data sheet



MedKoo Cat#: 522505 Name: O4I2 CAS#: 165682-93-9 Chemical Formula: C ₁₂ H ₁₁ ClN ₂ O ₂ S Exact Mass: 282.02298 Molecular Weight: 282.74		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

O4I2 is a potent inducers of Oct3/4. O4I2 showed high activity in enforcing Oct3/4 expression. O4I2 is a new class of small molecules suitable for iPSC generation. The octamer-binding transcription factor 4 (Oct3/4) is a master gene in the transcriptional regulatory network of pluripotent cells. Repression of Oct3/4 in embryonic stem cells (ESCs) is associated with cell differentiation and loss of pluripotency, whereas forced overexpression in cooperation with other transcriptional factors, such as Nanog, Sox2, and Lin28, can reprogram somatic cells back into pluripotent cells, termed induced pluripotent stem cells (iPSCs).

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	20.0	70.7

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.54 mL	17.68 mL	35.37 mL
5 mM	0.71 mL	3.54 mL	7.07 mL
10 mM	0.35 mL	1.77 mL	3.54 mL
50 mM	0.07 mL	0.35 mL	0.71 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Gama-Brambila RA, Chen J, Zhou J, Tascher G, Münch C, Cheng X. A PROTAC targets splicing factor 3B1. Cell Chem Biol. 2021 May 11:S2451-9456(21)00211-7. doi: 10.1016/j.chembiol.2021.04.018. Epub ahead of print. PMID: 34048672.
2. Cheng X, Yoshida H, Raoofi D, Saleh S, Alborzinia H, Wenke F, Göhring A, Reuter S, Mah N, Fuchs H, Andrade-Navarro MA, Adjaye J, Gul S, Utikal J, Mrowka R, Wölfl S. Ethyl 2-((4-Chlorophenyl)amino)thiazole-4-carboxylate and Derivatives Are Potent Inducers of Oct3/4. J Med Chem. 2015 Aug 13;58(15):5742-50. doi: 10.1021/acs.jmedchem.5b00226. Epub 2015 Jul 23. PMID: 26143659.

In vivo study

TBD

7. Bioactivity

Biological target:

O4I2 is a potent Oct3/4 inducer that induces the expression of pluripotent-associated genes Lin28, Sox2 and Nanog, and suppresses Rex1.

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In vitro activity

Repression of Oct3/4 in embryonic stem cells (ESCs) is associated with cell differentiation and loss of pluripotency, whereas forced overexpression in cooperation with other transcriptional factors, such as Nanog, Sox2, and Lin28, can reprogram somatic cells back into pluripotent cells, termed induced pluripotent stem cells (iPSCs). However, random integration and potential tumorigenic transformation caused by viral transduction limit the clinical application of iPSCs. By performing a cell-based high throughput screening (HTS) campaign, several potential small molecules were identified as inducers of Oct3/4 expression. A lead structure ethyl 2-((4-chlorophenyl)amino)-thiazole-4-carboxylate, termed O4I2 was reported, showing high activity in enforcing Oct3/4 expression. On the basis of chemical expansion, further derivatives having increased activities toward Oct3/4 induction have been identified. Thus, O4I2 and its derivatives should provide a new class of small molecules suitable for iPSC generation.

J Med Chem. 2015 Aug 13;58(15):5742-50. <https://pubmed.ncbi.nlm.nih.gov/26143659/>

In vivo activity

TBD

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.