

Certificate of Analysis

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Product Name: IDE 2

Catalog No.: 4016

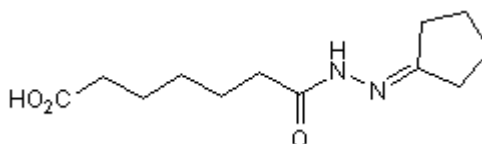
Batch No.: 3

CAS Number: 1136466-93-7

IUPAC Name: Heptanedioic acid-1-(2-cyclopentylidenehydrazide)

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₂H₂₀N₂O₃
Batch Molecular Weight: 240.3
Physical Appearance: Off-white solid
Solubility: water to 20 mM
DMSO to 100 mM
Storage: Store at +4°C
Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.5 (Dichloromethane:Methanol [9:1])
HPLC: Shows 100% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure
Microanalysis:

	Carbon Hydrogen Nitrogen		
Theoretical	59.98	8.39	11.66
Found	59.86	8.2	11.8

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

Product Information

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CAS Number: 1136466-93-7

IUPAC Name: Heptanedioic acid-1-(2-cyclopentylidenehydrazide)

Description:

Cell-permeable inducer of definitive endoderm formation in mouse and human embryonic stem cells (ESCs) (EC_{50} = 223 nM for induction of Sox17 expression in ESCs). Reported to activate TGF- β signaling and downstream Smad2 phosphorylation; upregulates Nodal expression. Promotes pancreatic progenitor cell formation in vitro, and gut tube formation in vivo.

Physical and Chemical Properties:

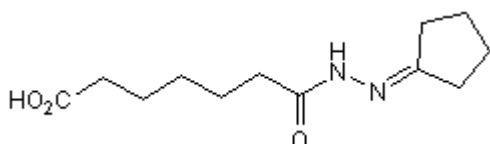
Batch Molecular Formula: $C_{12}H_{20}N_2O_3$

Batch Molecular Weight: 240.3

Physical Appearance: Off-white solid

Minimum Purity: >98%

Batch Molecular Structure:



Storage: Store at +4°C

Solubility & Usage Info:

water to 20 mM

DMSO to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Borowniak et al (2009) Small molecules efficiently direct endodermal differentiation of mouse and human embryonic stem cells. *Cell Stem Cell* **4** 348. PMID: 19341624.

Zaret (2009) Using small molecules to great effect in stem cell differentiation. *Cell Stem Cell* **4** 373. PMID: 19427285.

Filby et al (2011) Stimulation of Activin A/Nodal signaling is insufficient to induce definitive endoderm formation of cord blood-derived unrestricted somatic stem cells. *Stem Cell Res. Ther.* **2** 16. PMID: 21463501.

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