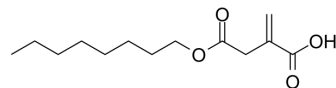


## 4-Octyl itaconate

<b>Cat. No.:</b>	HY-112675		
<b>CAS No.:</b>	3133-16-2		
<b>Molecular Formula:</b>	C <sub>13</sub> H <sub>22</sub> O <sub>4</sub>		
<b>Molecular Weight:</b>	242.31		
<b>Target:</b>	Keap1-Nrf2		
<b>Pathway:</b>	NF-κB		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 100 mg/mL (412.69 mM; Need ultrasonic)  
 H<sub>2</sub>O : < 0.1 mg/mL (ultrasonic;warming;heat to 80°C) (insoluble)

	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	4.1269 mL	20.6347 mL	41.2694 mL
	5 mM	0.8254 mL	4.1269 mL	8.2539 mL
	10 mM	0.4127 mL	2.0635 mL	4.1269 mL

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

#### In Vivo

- Add each solvent one by one: 20% HP-β-CD in saline  
Solubility: 5 mg/mL (20.63 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (10.32 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (10.32 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (10.32 mM); Clear solution
- Add each solvent one by one: 5% DMSO >> 40% PEG300 >> 5% Tween-80 >> 50% saline  
Solubility: ≥ 2.5 mg/mL (10.32 mM); Clear solution
- Add each solvent one by one: 5% DMSO >> 95% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (10.32 mM); Clear solution
- Add each solvent one by one: PBS  
Solubility: 1 mg/mL (4.13 mM); Clear solution; Need ultrasonic and warming and heat to 60°C

## BIOLOGICAL ACTIVITY

<b>Description</b>	4-Octyl Itaconate is a cell-permeable Itaconate derivative. Itaconate is an anti-inflammatory metabolite that activates Nrf2 via alkylation of KEAP1 <sup>[1]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	Nrf2 <sup>[1]</sup>
<b>In Vivo</b>	4-Octyl Itaconate (OI) is a cell-permeable itaconate derivative. 4-Octyl Itaconate is protective against lipopolysaccharide-induced lethality in vivo and decreases cytokine production <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Cell Metab. 2019 Aug.
- Nat Commun. 2023 Sep 18;14(1):5778.
- Mol Cell. 2022 May 25;S1097-2765(22)00443-9.
- Int J Oral Sci. 2022 May 31;14(1):27.
- J Nanobiotechnology. 2023 Oct 3;21(1):358.

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## REFERENCES

[1]. Mills EL, et al. Itaconate is an anti-inflammatory metabolite that activates Nrf2 via alkylation of KEAP1. Nature. 2018 Apr 5;556(7699):113-117.

**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](mailto:tech@MedChemExpress.com)

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