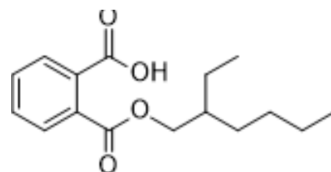


Mono-(2-ethylhexyl) phthalate

Cat. No.:	HY-W018392		
CAS No.:	4376-20-9		
Molecular Formula:	C ₁₆ H ₂₂ O ₄		
Molecular Weight:	278.34		
Target:	Endogenous Metabolite		
Pathway:	Metabolic Enzyme/Protease		
Storage:	Pure form	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	1 year
		-20°C	6 months



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (359.27 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent		1 mg	5 mg	10 mg
	Concentration	Mass			
	1 mM		3.5927 mL	17.9636 mL	35.9273 mL
	5 mM		0.7185 mL	3.5927 mL	7.1855 mL
	10 mM		0.3593 mL	1.7964 mL	3.5927 mL

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 4.29 mg/mL (15.41 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Mono-(2-ethylhexyl) phthalate (MEHP) is a major bioactive metabolite of diethylhexyl phthalate (DEHP). Mono-(2-ethylhexyl) phthalate can promote fatty acid synthesis in hepatocytes by regulating the expression of relevant genes and proteins, contributing to non-alcoholic fatty liver disease (NAFLD)^[1].

IC₅₀ & Target	Human Endogenous Metabolite
In Vitro	<p>Mono-(2-ethylhexyl) phthalate (0-100 μM, 48 h) can promote lipid accumulation in HepG2 cells^[1].</p> <p>Mono-(2-ethylhexyl) phthalate (0-100 μM, 24-48 h) increases the TG level in HepG2 cells in a dose-dependent manner^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay^[1]</p>
	Cell Line: HepG2 cells
	Concentration: 0-250 μ M
	Incubation Time: 24-72 h
	Result: Decreased cell viability at 50-250 μ M.
	Western Blot Analysis ^[1]
	Cell Line: HepG2 cells
	Concentration: 0-100 μ M
	Incubation Time: 6-48 h
	Result: <p>Increased the levels of ACC1, FASN, and SCD proteins after (24 h).</p> <p>Decreased the levels of ACC1, FASN, and SCD proteins (48 h).</p> <p>Increased the levels of ChREBP (24-48 h).</p> <p>Increased the expressions of five genes (SREBP-1c, ACC1, FASN, SCD and ChREBP) within a short period of time (6 h), and decreased with prolonged exposure (24 and 48 h).</p>
In Vivo	<p>Mono-(2-ethylhexyl) phthalate (0.1-1 mL/kg, p.o., daily, 3 days) causes fetal malformations and reduces live fetuses in pregnant mice^[2].</p> <p>Mono-(2-ethylhexyl) phthalate (25-50 mg/kg, i.p., once time) induces a significantly high incidence of somatic mutations in the coat hair of offspring of mice^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

CUSTOMER VALIDATION

- Sci Total Environ. 2023 Nov 30;168949.
- J Cachexia Sarcopenia Muscle. 2022 Oct 19.
- Ecotoxicol Environ Saf. 2020 Dec 21;209:111798.
- Environ Toxicol. 2023 Nov 17.
- Toxicol In Vitro. 2023 Jun 5;105626.

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REFERENCES

- [1]. Tomita I, et al. Fetotoxic effects of mono-2-ethylhexyl phthalate (MEHP) in mice. Environ Health Perspect. 1986 Mar;65:249-54.
- [2]. Bai J, et al. Mono-2-ethylhexyl phthalate induces the expression of genes involved in fatty acid synthesis in HepG2 cells. Environ Toxicol Pharmacol. 2019 Jul;69:104-

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

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