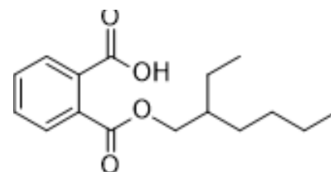


Mono-(2-ethylhexyl) phthalate

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.

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	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

1. Add each solvent one by one: PBS
Solubility: 4.29 mg/mL (15.41 mM); Clear solution; Need ultrasonic
2. 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
3. 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
4. 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].

IC ₅₀ & 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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