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Lieferung & Zahlungsart

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Zuschläge

- Mindermengenzuschlag
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2,4-Di-tert-butylphenol

Cat. No.: HY-W014589

CAS No.: 96-76-4

Molecular Formula: $C_{14}H_{22}O$

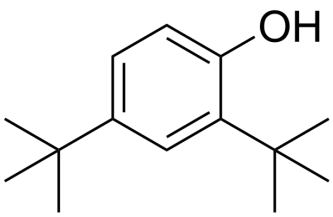
Molecular Weight: 206.33

Target: Endogenous Metabolite; Fungal; Apoptosis; RAR/RXR

Pathway: Metabolic Enzyme/Protease; Anti-infection; Apoptosis; Vitamin D Related/Nuclear Receptor

Storage:

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 (484.66 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.8466 mL	24.2331 mL	48.4663 mL
	5 mM	0.9693 mL	4.8466 mL	9.6933 mL
	10 mM	0.4847 mL	2.4233 mL	4.8466 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (12.12 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (12.12 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (12.12 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

2,4-Di-tert-butylphenol (2,4-DTBP) is an orally active RXRα activator and a human estrogen receptor ligand with anti-inflammatory and antioxidant activities, which can induce apoptosis in tumor cells. 2,4-Di-tert-butylphenol can activate the RXRα subtype in LXRα/RXRα, PPARγ/RXRα, and hormone receptor β/RXRα. 2,4-Di-tert-butylphenol also has antiviral and antifungal activities. 2,4-Di-tert-butylphenol can be used as an intermediate in the preparation of antioxidants and UV stabilizers, and is also used in the manufacture of medicines and fragrances[1][2][3].

IC_{50} & Target	Human Endogenous Metabolite	RXR α
In Vitro	2,4-Di-tert-butylphenol (10 μM; 14 d) can increase adipogenesis in human mesenchymal cells, with the same effect as PPARγ agonist (500 nM; 14 d)[2]. 2,4-Di-tert-butylphenol (10 μM; 14 d) can also increase adipogenesis that is blocked by PPARγ antagonist T0070907 (HY-13202) (10 μM) or RXRα antagonist HX531 (HY-108521) (1 μM)[2]. 2,4-Di-tert-butylphenol can also activate PPARγ and RXRα in human COS-7 cells[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
In Vivo	2,4-Di-tert-butylphenol (300 mg/kg/day; po; 28 d) causes hepatotoxicity (associated with centrilobular hypertrophy of hepatocytes, which results in liver weight gain) and nephrotoxicity in rats, and increases cholesterol and phospholipids in female rats[2]. 2,4-Di-tert-butylphenol (5-40 mg/kg/day; po; 28 d) can significantly attenuate $Aβ_{1-24}$-induced cognitive impairment and exert an anti-amnestic effect[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.	

CUSTOMER VALIDATION

- Ecotoxicol Environ Saf. 2024 Sep 2:284:116937.

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REFERENCES

[1]. Zhao F, et al. Natural sources and bioactivities of 2, 4-di-tert-butylphenol and its analogs[J]. Toxins, 2020, 12(1): 35.

[2]. Ren XM, et al. 2,4-Di-tert-butylphenol Induces Adipogenesis in Human Mesenchymal Stem Cells by Activating Retinoid X Receptors. Endocrinology. 2023 Feb 11;164(4):bqad021.

[3]. Choi SJ, et al. 2,4-Di-tert-butylphenol from sweet potato protects against oxidative stress in PC12 cells and in mice. J Med Food. 2013 Nov;16(11):977-83.

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