



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

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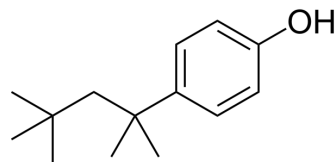
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## 4-tert-Octylphenol

<b>Cat. No.:</b>	HY-B1941		
<b>CAS No.:</b>	140-66-9		
<b>Molecular Formula:</b>	C <sub>14</sub> H <sub>22</sub> O		
<b>Molecular Weight:</b>	206.32		
<b>Target:</b>	Endogenous Metabolite; Apoptosis; DNA/RNA Synthesis		
<b>Pathway:</b>	Metabolic Enzyme/Protease; Apoptosis; Cell Cycle/DNA Damage		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 100 mg/mL (484.68 mM; Need ultrasonic)			
		Solvent Concentration	Mass	
			1 mg	5 mg
			10 mg	
<b>Preparing Stock Solutions</b>	<b>1 mM</b>	4.8468 mL	24.2342 mL	48.4684 mL
	<b>5 mM</b>	0.9694 mL	4.8468 mL	9.6937 mL
	<b>10 mM</b>	0.4847 mL	2.4234 mL	4.8468 mL
Please refer to the solubility information to select the appropriate solvent.				
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.5 mg/mL (12.12 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (12.12 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2.5 mg/mL (12.12 mM); Clear solution</li> </ol>			

### BIOLOGICAL ACTIVITY

<b>Description</b>	<p>4-tert-Octylphenol, an endocrine-disrupting chemical, is an estrogenic agent. 4-tert-Octylphenol is also a biodegradation product of non-ionic surfactants alkylphenol polyethoxylates. 4-tert-Octylphenol induces apoptosis in neuronal progenitor cells in offspring mouse brain. 4-tert-Octylphenol reduces bromodeoxyuridine (BrdU), mitotic marker Ki67, and phospho-histone H3 (p-Histone-H3), resulting in a reduction of neuronal progenitor proliferation. 4-tert-Octylphenol disrupts brain development and behavior in mice, which is promising for research of immune response, neuro-related diseases and ethology<sup>[1][2][3][4]</sup>.</p>
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IC <sub>50</sub> & Target	Human Endogenous Metabolite		
<b>In Vitro</b>	<p>4-tert-Octylphenol (0.01 and 1 μM, 24 h) may inhibit proliferation and promote apoptosis of neuronal progenitor cells during the early stage of brain development<sup>[1]</sup>.</p> <p>4-tert-Octylphenol (10 μM, 6 h) down-regulates the expression of IL-12p35, IFN-γ2 and CXCb2 in LPS-stimulated monocytes/macrophages and decreases the levels of nitric oxide (NO) released from LPS-stimulated cells<sup>[3]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Immunofluorescence<sup>[1]</sup></p>		
	<table border="1"> <tr> <td>Cell Line:</td> <td>Primary cortical neurons</td> </tr> </table>	Cell Line:	Primary cortical neurons
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	<p>Immunofluorescence<sup>[3]</sup></p>		
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<p>Cell Proliferation Assay<sup>[1]</sup></p>			
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<b>In Vivo</b>	<p>4-tert-Octylphenol (10, 50 mg/kg, s.c., a single dose) promotes cell death in offspring mouse brain, induces cognitive dysfunction and impairs sociability and decreases social novelty preference in offspring mice<sup>[1]</sup>.</p> <p>4-tert-Octylphenol (10, 50 mg/kg, s.c., a single dose for 24 h) promotes cell cycle exit and inhibits cell cycle reentry of dentate gyrus (DG) neural progenitors in embryonic and adult neurogenesis<sup>[1]</sup>.</p> <p>4-tert-Octylphenol (2.5 μg/kg, feed, daily for 14 days) lowers numbers of peritoneal leukocytes/phagocytes compared to those in control infected animals in peritoneal and head kidney leukocytes of fish<sup>[3]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>		
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such as spatial and nonspatial learning and memory.

Animal Model:	Sexually immature, young (9–12 months) common carp <sup>[3]</sup>
Dosage:	2.5 µg/kg food
Administration:	feed, daily for 14 days
Result:	Lowred numbers of peritoneal leukocytes/phagocytes in peritoneal and head kidney leukocytes of fish.

## REFERENCES

- [1]. Olaniyan LWB, et al. Environmental Water Pollution, Endocrine Interference and Ecotoxicity of 4-tert-Octylphenol: A Review[J]. Rev Environ Contam Toxicol. 2020;248:81-109.
- [2]. Maciuszek M, et al. 17 $\alpha$ -ethinylestradiol and 4-tert-octylphenol concurrently disrupt the immune response of common carp[J]. Fish Shellfish Immunol. 2020 Dec;107(Pt A):238-250.
- [3]. Lee J, Zee S, et al. Effects of crosstalk between steroid hormones mediated thyroid hormone in zebrafish exposed to 4-tert-octylphenol: Estrogenic and anti-androgenic effects[J]. Ecotoxicol Environ Saf. 2024 Jun 1;277:116348.
- [4]. Dinh Nam Tran, et al. 4-tert-Octylphenol Exposure Disrupts Brain Development and Subsequent Motor, Cognition, Social, and Behavioral Functions. Oxidative Medicine and Cellular Longevity, 2020.

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

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