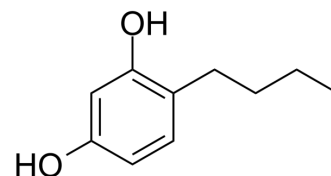


## 4-Butylresorcinol

<b>Cat. No.:</b>	HY-107369		
<b>CAS No.:</b>	18979-61-8		
<b>Molecular Formula:</b>	C <sub>10</sub> H <sub>14</sub> O <sub>2</sub>		
<b>Molecular Weight:</b>	166.22		
<b>Target:</b>	Tyrosinase		
<b>Pathway:</b>	Metabolic Enzyme/Protease		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 100 mg/mL (601.61 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	1 mM	6.0161 mL	30.0806 mL	60.1612 mL
		5 mM	1.2032 mL	6.0161 mL	12.0322 mL
10 mM		0.6016 mL	3.0081 mL	6.0161 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 (15.04 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 (15.04 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2.5 mg/mL (15.04 mM); Clear solution</li> </ol>				

### BIOLOGICAL ACTIVITY

<b>Description</b>	4-Butylresorcinol is a phenol derivative which can inhibit tyrosinase with IC <sub>50</sub> of 11.27 μM.
<b>IC<sub>50</sub> &amp; Target</b>	IC <sub>50</sub> : 11.27 μM (4-Butylresorcinol) <sup>[1]</sup>
<b>In Vitro</b>	It shows that 4-Butylresorcinol (4-n-butylresorcinol) significantly inhibits melanin synthesis in a concentration-dependent manner. In addition, it is also found to inhibit the activity of tyrosinase, the rate-limiting melanogenic enzyme. 4-Butylresorcinol does not induce ERK, Akt activation, or MITF degradation, and has no effect on cAMP response element

binding protein (CREB) phosphorylation, which stimulates MITF expression. 4-Butylresorcinol strongly reduces tyrosinase activity in a cell-free system. Moreover, 4-Butylresorcinol shows an additive effect in combination with hinokitiol, which reduces MITF expression<sup>[2]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

### Kinase Assay <sup>[2]</sup>

Briefly, Mel-Ab cells are cultured in 60 mm dishes. After incubating with test substances (including 4-Butylresorcinol) in DMEM containing 2% FBS for 4d, the cells are washed with ice-cold PBS and lysed with phosphate buffer (pH 6.8) containing 1% Triton X-100. The cells are then disrupted by freeze-thawing, and lysates are clarified by centrifuging at 10000×g for 5 min. After quantifying protein levels and adjusting concentrations with lysis buffer, 90 µL of each lysate, is placed in a well of a 96-well plate, and 10 µL of 10 mM L-DOPA is then added. Control wells contain 90 µL of lysis buffer and 10 µL of 10mM L-DOPA<sup>[2]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

### Cell Assay <sup>[2]</sup>

Mel-Ab cell line is a mouse-derived spontaneously immortalized melanocyte cell line that produces large amounts of melanin. Mel-Ab cells are incubated in DMEM supplementing with 10% fetal bovine serum (FBS), 100 nM TPA, 1 nM CT, 50 µg/mL streptomycin, and 50 U/mL penicillin at 37 °C in 5% CO<sub>2</sub>. Cell viability is determined using a crystal violet assay. After incubating cells with test substances for 24 h, the medium is removed and stained with 0.1% crystal violet in 10% ethanol for 5 min at room temperature and then rinsed four times with distilled water<sup>[2]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## REFERENCES

[1]. Jiang Y, et al. Synthesis and biological evaluation of unsymmetrical curcumin analogues as tyrosinaseinhibitors. *Molecules*. 2013 Apr 3;18(4):3948-61.

[2]. Kim DS, et al. Inhibitory effects of 4-n-butylresorcinol on tyrosinase activity and melanin synthesis. *Biol Pharm Bull*. 2005 Dec;28(12):2216-9.

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

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