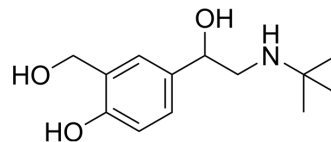


## Salbutamol

<b>Cat. No.:</b>	HY-B1037		
<b>CAS No.:</b>	18559-94-9		
<b>Molecular Formula:</b>	C <sub>13</sub> H <sub>21</sub> NO <sub>3</sub>		
<b>Molecular Weight:</b>	239.31		
<b>Target:</b>	Adrenergic Receptor; ERK		
<b>Pathway:</b>	GPCR/G Protein; Neuronal Signaling; MAPK/ERK Pathway; Stem Cell/Wnt		
<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 (417.87 mM; Need ultrasonic)			
		Solvent Concentration	Mass	
			1 mg	5 mg
			10 mg	
<b>Preparing Stock Solutions</b>	<b>1 mM</b>	4.1787 mL	20.8934 mL	41.7868 mL
	<b>5 mM</b>	0.8357 mL	4.1787 mL	8.3574 mL
	<b>10 mM</b>	0.4179 mL	2.0893 mL	4.1787 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 (10.45 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 (10.45 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2.5 mg/mL (10.45 mM); Clear solution</li> </ol>			

### BIOLOGICAL ACTIVITY

<b>Description</b>	Salbutamol (Albuterol) is a short-acting beta-2 adrenergic receptor agonist with oral activity. Salbutamol promotes tumorigenesis of gastric cancer cells through the β <sub>2</sub> -AR/ERK/EMT pathway. Salbutamol is used to study bronchospasms caused by asthma and chronic obstructive pulmonary disease (COPD) <sup>[1][2]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	β adrenergic receptor
<b>In Vitro</b>	Salbutamol (16 μM, 24 h) significantly induces EMT, migration and invasion by ERK (extracellular signal-regulated kinase)

phosphorylation in gastric cancer cells<sup>[1]</sup>.

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

#### Western Blot Analysis<sup>[1]</sup>

Cell Line:	MGC803, SGC7901
Concentration:	16 $\mu$ M
Incubation Time:	24 h
Result:	Increased $\beta$ 2-AR and ERK levels. Upregulated mesenchymal markers, CDH2 (N-cadherin) and Snail expression, and decreased the expression of epithelial marker CDH1 (E-cadherin).

#### In Vivo

Salbutamol (5 mg/kg/day, orally, for 2 consecutive weeks) can increase tumor growth in nude mice with gastric cancer<sup>[1]</sup>.

Salbutamol (6 mg/kg orally for 4 weeks) has a significant protective effect against STZ (HY-13753)-induced skeletal muscle atrophy in diabetic rats<sup>[2]</sup>.

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

Animal Model:	STZ induced diabetic rats <sup>[2]</sup>
Dosage:	6 mg/kg
Administration:	p.o. for 4 weeks
Result:	Enhanced muscle grip strength, coordination, and antioxidant levels. Reduced proinflammatory markers and oxidative stress. Reduced serum muscle biomarkers. Increased testosterone, restored lipidemic levels, and improved muscle cellular architecture.

## CUSTOMER VALIDATION

- Cell Rep. 2019 Dec 3;29(10):2929-2935.e4
- Respir Res. 2022 Dec 28;23(1):380.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

[1]. Lu Y, et al. Chronic stress model simulated by salbutamol promotes tumorigenesis of gastric cancer cells through  $\beta$ 2-AR/ERK/EMT pathway. J Cancer. 2022 Jan 1;13(2):401-412.

[2]. Hong YP, et al. Effects of Castanospermine on Inflammatory Response in a Rat Model of Experimental Severe Acute Pancreatitis. Arch Med Res. 2016 Aug;47(6):436-445.

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

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