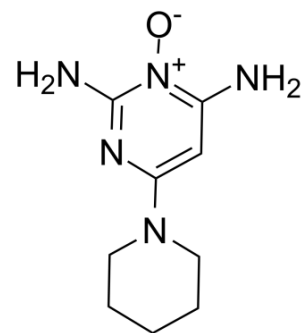


## Minoxidil

<b>Cat. No.:</b>	HY-B0112		
<b>CAS No.:</b>	38304-91-5		
<b>Molecular Formula:</b>	C <sub>9</sub> H <sub>15</sub> N <sub>5</sub> O		
<b>Molecular Weight:</b>	209.25		
<b>Target:</b>	Potassium Channel		
<b>Pathway:</b>	Membrane Transporter/Ion Channel		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

Ethanol : 7.14 mg/mL (34.12 mM; Need ultrasonic)  
 DMSO : 4.6 mg/mL (21.98 mM; Need ultrasonic and warming)  
 H<sub>2</sub>O : 1 mg/mL (4.78 mM; ultrasonic and warming and heat to 50°C)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	4.7790 mL	23.8949 mL	47.7897 mL
	5 mM	0.9558 mL	4.7790 mL	9.5579 mL
	10 mM	0.4779 mL	2.3895 mL	4.7790 mL

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

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 0.5 mg/mL (2.39 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 0.5 mg/mL (2.39 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 0.5 mg/mL (2.39 mM); Clear solution
- Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 0.71 mg/mL (3.39 mM); Clear solution
- Add each solvent one by one: 10% EtOH >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 0.71 mg/mL (3.39 mM); Clear solution
- Add each solvent one by one: 10% EtOH >> 90% corn oil  
Solubility: ≥ 0.71 mg/mL (3.39 mM); Clear solution
- Add each solvent one by one: 50% PEG300 >> 50% saline  
Solubility: 5 mg/mL (23.89 mM); Clear solution; Need ultrasonic

## BIOLOGICAL ACTIVITY

<b>Description</b>	Minoxidil (U10858) is an ATP-sensitive potassium ( $K_{ATP}$ ) channel opener, a potent oral antihypertensive agent and a peripheral vasodilator that promotes vasodilation also affects hair growth. Minoxidil is also a potent inhibitor of soybean lipoxygenase with an $IC_{50}$ of 20 $\mu M$ <sup>[1][2][3]</sup> .								
<b><math>IC_{50}</math> &amp; Target</b>	$IC_{50}$ : 20 $\mu M$ (soybean lipoxygenase) <sup>[1]</sup> ; ATP-sensitive potassium channel <sup>[2]</sup>								
<b>In Vitro</b>	Minoxidil (1-100 $\mu M$ ; 24 hours; RAMEC cells) treatment shows very low cytotoxicities in the whole area of concentrations examined (from 1 $\mu M$ to 100 $\mu M$ ) <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.								
<b>In Vivo</b>	Minoxidil (0.01 mmol/kg body weight; intraperitoneal injection; for 3.5 hours; fisher 344 rats) treatment inhibits carrageenan-induced rat paw oedema with an inhibitory potency (49%) <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.								
	<table><tr><td>Animal Model:</td><td>Fisher 344 rats (150-200 g) with oedema<sup>[1]</sup></td></tr><tr><td>Dosage:</td><td>0.01 mmol/kg body weight</td></tr><tr><td>Administration:</td><td>Intraperitoneal injection; for 3.5 hours</td></tr><tr><td>Result:</td><td>Inhibition of the carrageenin-induced oedema.</td></tr></table>	Animal Model:	Fisher 344 rats (150-200 g) with oedema <sup>[1]</sup>	Dosage:	0.01 mmol/kg body weight	Administration:	Intraperitoneal injection; for 3.5 hours	Result:	Inhibition of the carrageenin-induced oedema.
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Result:	Inhibition of the carrageenin-induced oedema.								

## REFERENCES

- [1]. Hadjipavlou-Litina D, et al. Synthesis and evaluation of the antioxidative potential of minoxidil-polyamine conjugates. *Biochimie*. 2013 Jul;95(7):1437-49. doi: 10.1016/j.biochi.2013.03.009. Epub 2013 Mar 28.
- [2]. Davies GC, et al. Novel and established potassium channel openers stimulate hair growth in vitro: implications for their modes of action in hair follicles. *J Invest Dermatol*. 2005 Apr;124(4):686-94.
- [3]. Cohen RL, et al. Direct effects of minoxidil on epidermal cells in culture. *J Invest Dermatol*. 1984 Jan;82(1):90-3.

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

India Contact:  
Life Technologies (India) Pvt. Ltd.  
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444  
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com