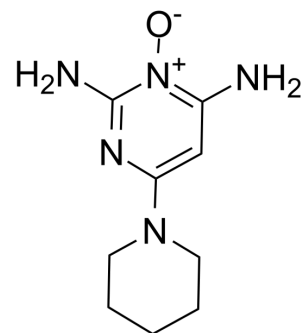


## Minoxidil

Cat. No.:	HY-B0112
CAS No.:	38304-91-5
Molecular Formula:	C <sub>9</sub> H <sub>15</sub> N <sub>5</sub> O
Molecular Weight:	209.25
Target:	Potassium Channel; Endogenous Metabolite
Pathway:	Membrane Transporter/Ion Channel; Metabolic Enzyme/Protease
Storage:	<div> <div>Powder</div> <div>-20°C    3 years</div> <div>4°C    2 years</div> </div> <div> <div>In solvent</div> <div>-80°C    2 years</div> <div>-20°C    1 year</div> </div>



### SOLVENT & SOLUBILITY

#### In Vitro

Ethanol : 7.14 mg/mL (34.12 mM; Need ultrasonic)  
DMSO : 5 mg/mL (23.89 mM; ultrasonic and warming and heat to 60°C)  
H<sub>2</sub>O : 1 mg/mL (4.78 mM; ultrasonic and warming and heat to 50°C)

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	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: 50% PEG300 >> 50% saline  
Solubility: 5 mg/mL (23.89 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: PBS  
Solubility: 1.96 mg/mL (9.37 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
- 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: 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:  $\geq 0.5$  mg/mL (2.39 mM); Clear solution

## BIOLOGICAL ACTIVITY

Description	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> .								
$IC_{50}$ & Target	$IC_{50}$ : 20 $\mu$ M (soybean lipoxygenase) <sup>[1]</sup> ; ATP-sensitive potassium channel <sup>[2]</sup>								
In Vitro	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.								
In Vivo	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.
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.								

## CUSTOMER VALIDATION

- Cell Stem Cell. 2024 Jan 4;31(1):52-70.e8.
- Cell Rep. 2021 Jun 8;35(10):109225.
- Antioxidants (Basel). 2023, Jun 23, 12(7), 1332.
- Drug Des Devel Ther. 2023 Aug 24;17:2537-2547.
- Sys Rev Pharm. 2021;12(1):402-410.

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## 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.

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

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