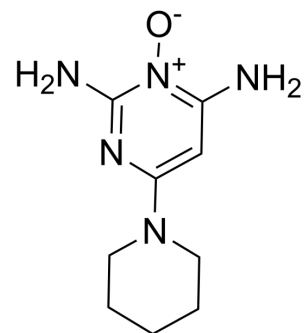


Minoxidil

Cat. No.:	HY-B0112		
CAS No.:	38304-91-5		
Molecular Formula:	C ₉ H ₁₅ N ₃ O		
Molecular Weight:	209.25		
Target:	Potassium Channel; Endogenous Metabolite		
Pathway:	Membrane Transporter/Ion Channel; Metabolic Enzyme/Protease		
Storage:	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)
 H₂O : 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: ≥ 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 μM ^{[1][2][3]} .								
IC_{50} & Target	IC_{50} : 20 μM (soybean lipoxygenase) ^[1] ; ATP-sensitive potassium channel ^[2]								
In Vitro	Minoxidil (1-100 μM ; 24 hours; RAMEC cells) treatment shows very low cytotoxicities in the whole area of concentrations examined (from 1 μM to 100 μM) ^[1] . 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%) ^[1] . 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^[1]</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 ^[1]	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 ^[1]								
Dosage:	0.01 mmol/kg body weight								
Administration:	Intraperitoneal injection; for 3.5 hours								
Result:	Inhibition of the carrageenin-induced oedema.								

CUSTOMER VALIDATION

- Cell Rep. 2021 Jun 8;35(10):109225.
- 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.

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

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