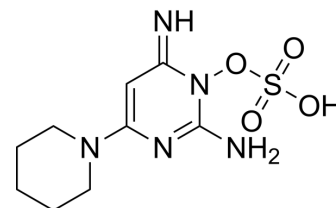


## Minoxidil sulfate

<b>Cat. No.:</b>	HY-B1445
<b>CAS No.:</b>	83701-22-8
<b>Molecular Formula:</b>	C <sub>9</sub> H <sub>15</sub> N <sub>5</sub> O <sub>4</sub> S
<b>Molecular Weight:</b>	289.31
<b>Target:</b>	Potassium Channel
<b>Pathway:</b>	Membrane Transporter/Ion Channel
<b>Storage:</b>	-20°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 250 mg/mL (864.12 mM; Need ultrasonic)  
H<sub>2</sub>O : 50 mg/mL (172.82 mM; Need ultrasonic)

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	3.4565 mL	17.2825 mL	34.5650 mL
	5 mM	0.6913 mL	3.4565 mL	6.9130 mL
	10 mM	0.3456 mL	1.7282 mL	3.4565 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: ≥ 2.08 mg/mL (7.19 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.08 mg/mL (7.19 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.08 mg/mL (7.19 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Minoxidil sulfate, a potent and ATP-sensitive K<sup>+</sup> channel opener, is the sulfated metabolite of minoxidil. Minoxidil sulfate is considered as a vasodilator to promote hair growth in vivo<sup>[1][3]</sup>.

#### IC<sub>50</sub> & Target

IC<sub>50</sub>: K channel<sup>[2]</sup>

#### In Vitro

Minoxidil sulfate (1-100 μM; 2 hours) significantly reduces the permeability of blood-brain tumor barrier (BTB) in a monolayer of RBMEC in a time-dependent manner, additionally, the effects of MS on transendothelial electrical resistance

(TEER) is Transendothelial electrical resistance (TEER) at 2 h with high concentration<sup>[2]</sup>.

Minoxidil sulfate (0-100  $\mu$ M; 0-4 hours) increases the RhoA activation in brain tumor tissue by 1 h and the highest level appears at 2 h, it also significantly induces transient PKB phosphorylation at Ser-473, without affecting total PKB levels. Additionally, LY294002 partly prevents the phosphorylation of PKB induced by MS<sup>[2]</sup>.

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

#### Western Blot Analysis<sup>[2]</sup>

Cell Line:	Rat brain microvascular endothelial cells (RBMECs)
Concentration:	0-100 $\mu$ M
Incubation Time:	15 mins, 30 mins, 1 hour, 2 hours, 4 hours
Result:	Induced RhoA activation and PKB phosphorylation at Ser-473.

## REFERENCES

[1]. A E Buhl, et al. Minoxidil sulfate is the active metabolite that stimulates hair follicles. J Invest Dermatol. 1990 Nov;95(5):553-7.

[2]. Yan-ting Gu, et al. Minoxidil sulfate induced the increase in blood-brain tumor barrier permeability through ROS/RhoA/PI3K/PKB signaling pathway. Neuropharmacology 2013 Dec;75:407-15. doi: 10.1016/j.neuropharm.

[3]. Y Nakaya, et al. Effect of minoxidil sulfate and pinacidil on single potassium channel current in cultured human outer root sheath cells and dermal papilla cells. J Dermatol Sci. 1994 Jul;7 Suppl:S104-8.

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

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