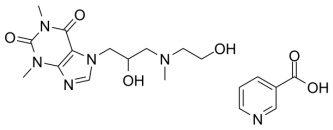
Xanthinol Nicotinate

Cat. No.:	HY-B1815		
CAS No.:	437-74-1		
Molecular Formula:	$C_{19}H_{26}N_6O_6$		
Molecular Weight:	434.45		
Target:	Others		
Pathway:	Others		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

H_2O : 250 mg/mL (575.44 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.3018 mL	11.5088 mL	23.0176 mL
5 mM	0.4604 mL	2.3018 mL	4.6035 mL
10 mM	0.2302 mL	1.1509 mL	2.3018 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 50 mg/mL (115.09 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Xanthinol Nicotinate (Xanthinol Niacinate), a vasodilator, can act directly on the smooth muscle of small arteries and capillaries. Xanthinol Nicotinate expands blood vessels, improves blood rheology and reduces peripheral vascular resistance[1][2].

In Vitro

Xanthinol Nicotinate (Xanthinol Niacinate; 2.76-276 μM; for 24 hours) inhibits HUASMC proliferation in a dose-dependent manner[2].

Xanthinol Nicotinate (2.76-276 μM; for 24 hours) dose-dependently decreases the PDGFR mRNA and PDGFR-β levels on the cell membranes of HUASMCs[2].

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

Cell Proliferation Assay[2]

Cell Line:	human umbilical artery smooth muscle cell (HUASMC)
Concentration:	2.76, 27.6 or 276 μM
Incubation Time:	for 24 hours
Result:	Inhibited HUASMC proliferation in a dose-dependent manner.

Western Blot Analysis[2]

Cell Line:	HUASMC
Concentration:	2.76, 27.6 or 276 μM
Incubation Time:	for 24 hours
Result:	Dose-dependently decreased the PDGFR mRNA and PDGFR-β levels on the cell membranes of HUASMCs.

In Vivo

Xanthinol Nicotinate (Xanthinol Niacinate; 75 mg/kg; IP) rapidly and transiently modifies tumor pO_2 and the maximal pO_2 values are obtained 10 to 30 minutes after Xanthinol Nicotinate administration[1].
Xanthinol Nicotinate is able to radiosensitize the tumors when applying 10 Gy of X-Rays during the reoxygenation of the tumors (enhancement in radiation response of 1.4)[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	5 week-old male NMRI mice[1]
Dosage:	75 mg/kg
Administration:	IP
Result:	Rapidly and transiently modified tumor pO_2 and Maximal pO_2 values were obtained 10 to 30 minutes after XN administration.

REFERENCES

[1]. Segers J, et al. Use of Xanthinol Nicotinate as a co-treatment for radio- and chemo-therapy in experimental tumors. Int J Cancer. 2010 Jan 15;126(2):583-8.

[2]. Bai X, et al. Inhibited proliferation of human umbilical artery smooth muscle cells by xanthinol nicotinate. Med Biol Eng Comput. 2016 Jun;54(6):891-8.

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