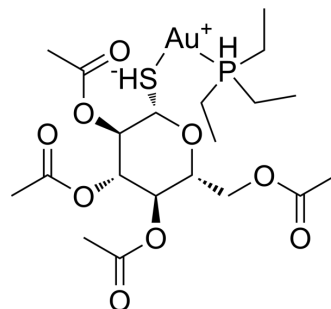


Auranofin

Cat. No.:	HY-B1123
CAS No.:	34031-32-8
Molecular Formula:	C ₂₀ H ₃₆ AuO ₉ PS
Molecular Weight:	680.5
Target:	Bacterial; SARS-CoV
Pathway:	Anti-infection
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 50 mg/mL (73.48 mM; Need ultrasonic)						
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg	
				1 mM	1.4695 mL	7.3475 mL	14.6951 mL
				5 mM	0.2939 mL	1.4695 mL	2.9390 mL
				10 mM	0.1470 mL	0.7348 mL	1.4695 mL
Please refer to the solubility information to select the appropriate solvent.							
In Vivo	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (3.67 mM); Clear solution						
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: 2.08 mg/mL (3.06 mM); Suspended solution; Need ultrasonic and warming						
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (3.06 mM); Clear solution						

BIOLOGICAL ACTIVITY

Description	Auranofin (SKF-39162) is a thioredoxin reductase (TrxR) inhibitor with an IC ₅₀ of 0.2 μM. Auranofin exhibits antiviral activity against SARS-CoV21, with a CC ₅₀ of 4.2 μM for monkey kidney Vero E6 cells.
IC ₅₀ & Target	IC50: 0.2 μM (TrxR) ^[1]
In Vitro	Auranofin is a drug that is approved for the treatment of rheumatoid arthritis but is being investigated for potential therapeutic application in a number of other diseases including cancer, neurodegenerative disorders. Auranofin induces apoptosis in cells through a Bax/Bak-dependent mechanism associated with selective disruption of mitochondrial redox homeostasis in conjunction with oxidation of Prx3 ^[1] .

Auranofin inhibits proliferation and survival of SKOV3 cells in a dose- and time-dependent manner. Auranofin treatment activates the pro-apoptotic caspase-3, increases protein levels of apoptosis-inducing proteins Bax and Bim and reduces the expression of the anti-apoptotic mediator Bcl-2 in SKOV3 cells^[2].

Auranofin is a lipophilic gold compound with anti-inflammatory and immunosuppressive properties. Auranofin inhibits the cell growth and induction of mitochondrial apoptosis in PC3 human prostate cancer cells. Treatment with auranofin significantly inhibits cell viability with an IC₅₀ value of 2.5 μM after 24 h^[3].

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

In Vivo

Prophylactic treatment of adjuvant-induced arthritis rats with auranofin results in a slight reduction in paw edema, a complete normalization of the depressed IL-2 production, and a reduction of the elevated IL-1 production, but has no effect on the depressed IL-3 production^[4].

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PROTOCOL

Cell Assay ^[2]

Auranofin is dissolved in DMSO. Cells are treated with auranofin (0, 50, 100, 200 and 400 nM) for 72 h for the dose-dependent response assay and 100 nM of auranofin is added into the wells for 0, 24, 72 and 120 h for the time-dependent response assay. Control cultures are treated with DMSO. Cell viability is measured by the MTT assay^[2].

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

Animal Administration ^[4]

Rats: Prophylactically, auranofin (6.7 to 15 mg of gold/kg), indomethacin (2 mg/kg) or tragacanth vehicle control were administered orally at daily intervals beginning on the day of adjuvant injection. On days 16 to 17 peritoneal exudate cells or spleen cells from normal or adjuvant-injected rats were isolated and tested^[4].

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

CUSTOMER VALIDATION

- Nat Microbiol. 2020 Nov;5(11):1439-1448.
- Nat Commun. 2020 Oct 16;11(1):5263.
- Nucleic Acids Res. 2021 Jan 8;49(D1):D11113-D11121.
- Cell Death Differ. 2020 Mar;27(3):1086-1104.
- Redox Biol. 2020 Sep;36:101652.

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REFERENCES

[1]. Cox AG, et al. The thioredoxin reductase inhibitor auranofin triggers apoptosis through a Bax/Bak-dependent process that involves peroxiredoxin 3 oxidation. *Biochem Pharmacol.* 2008 Oct 30;76(9):1097-109.

[2]. Park SH, et al. Auranofin displays anticancer activity against ovarian cancer cells through FOXO3 activation independent of p53. *Int J Oncol.* 2014 Oct;45(4):1691-8.

[3]. Park N, et al. Auranofin promotes mitochondrial apoptosis by inducing annexin A5 expression and translocation in human prostate cancer cells. *J Toxicol Environ Health A.* 2014;77(22-24):1467-76.

[4]. Lee JC, et al. Effect of auranofin treatment on aberrant splenic interleukin production in adjuvant arthritic rats. *J Immunol.* 1987 Nov 15;139(10):3268-74.

[5]. Shuofeng Yuan, et al. Metallo drug ranitidine bismuth citrate suppresses SARS-CoV-2 replication and relieves virus-associated pneumonia in Syrian hamsters. *Nat*

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA