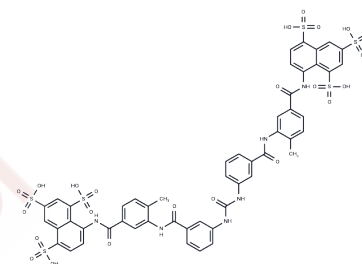


## Suramin

## Chemical Properties

CAS No. :	145-63-1
Formula:	C <sub>51</sub> H <sub>40</sub> N <sub>6</sub> O <sub>23</sub> S <sub>6</sub>
Molecular Weight:	1297.28
Storage:	Keep away from moisture Powder: -20°C for 3 years   In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



## Biological Description

Description	Suramin is a dual-function inhibitor of SARS-CoV-2 RNA-dependent RNA polymerase (RdRp) and protein tyrosine phosphatases (PTPases), with antiparasitic, anticancer, and anti-angiogenesis properties, inhibiting sirtuins and DNA topoisomerase II.
Targets(IC50)	Apoptosis, Reverse Transcriptase, Parasite, DNA/RNA Synthesis, Phosphatase, SARS-CoV, Sirtuin, Topoisomerase
In vitro	Low concentrations of 35 $\mu$ M (50 $\mu$ g/mL) and 70 $\mu$ M (100 $\mu$ g/mL) Suramin were not cytotoxic to preadipocytes. However, high concentrations of 105 $\mu$ M (150 $\mu$ g/mL) and 140 $\mu$ M (200 $\mu$ g/mL) showed cytotoxic effects by reducing cell viability. Suramin (0-140 $\mu$ M) stimulated and promoted lipogenic differentiation of FSCs in a time- and dose-dependent manner. [1] Suramin activates Nrf2 and correspondingly inhibits the activated B cell (NF- $\kappa$ B) nuclear factor kappa light chain enhancer and mitogen-activated protein kinase (MAPK) pathway, thereby reducing IL-1 $\beta$ -stimulated chondrocyte inflammation and ECM degeneration. Suramin repolarizes M1 macrophages to M2 phenotype, further reducing apoptosis of chondrocytes. [2]
In vivo	Rats were intraperitoneally injected with 50 mg/kg Suramin once a week for 4 weeks, and the results showed that Suramin could slightly promote rat adipogenesis in vivo. [1]

### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	0.7708 mL	3.8542 mL	7.7084 mL
5 mM	0.1542 mL	0.7708 mL	1.5417 mL
10 mM	0.0771 mL	0.3854 mL	0.7708 mL
50 mM	0.0154 mL	0.0771 mL	0.1542 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Li H, et al. Suramin, an antiparasitic drug, stimulates adipocyte differentiation and promotes adipogenesis. *Lipids Health Dis.* 2023 Dec 13;22(1):222.

Shen PC, et al. Suramin ameliorates osteoarthritis by acting on the Nrf2/HO-1 and NF- $\kappa$ B signaling pathways in chondrocytes and promoting M2 polarization in macrophages. *Int Immunopharmacol.* 2023 Jul;120:110295.

Trapp J, et al. Structure-activity studies on suramin analogues as inhibitors of NAD<sup>+</sup>-dependent histone deacetylases (sirtuins). *ChemMedChem.* 2007 Oct;2(10):1419-31.

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