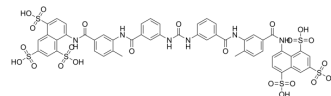


Suramin

Cat. No.:	HY-B0879
CAS No.:	145-63-1
Molecular Formula:	C ₅₁ H ₄₀ N ₆ O ₂₃ S ₆
Molecular Weight:	1297.28
Target:	Phosphatase; Sirtuin; Reverse Transcriptase; Topoisomerase; Apoptosis; Parasite; SARS-CoV
Pathway:	Metabolic Enzyme/Protease; Cell Cycle/DNA Damage; Epigenetics; Anti-infection; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	<p>Suramin is a reversible and competitive protein-tyrosine phosphatases (PTPases) inhibitor^[1]. Suramin is a potent inhibitor of sirtuins: SirT1 (IC₅₀=297 nM), SirT2 (IC₅₀=1.15 μM), and SirT5 (IC₅₀=22 μM)^[2]. Suramin is a competitive inhibitor of reverse transcriptase (DNA topoisomerase II: IC₅₀=5 μM)^{[3][4]}. Suramin is a potent SARS-CoV-2 RNA-dependent RNA polymerase (RdRp) inhibitor^[5]. Suramin efficiently inhibits IP5K and is an antiparasitic, anti-neoplastic and anti-angiogenic agent^{[6][7][8]}.</p>																
IC₅₀ & Target	<p>SIRT1 297 nM (IC₅₀)</p>	<p>SIRT2 1.15 μM (IC₅₀)</p>	<p>SIRT5 22 μM (IC₅₀)</p>														
In Vitro	<p>Suramin (50-600 μg/mL; for 24-96 hours) inhibits cells proliferation in a dose-dependent and time-dependent manner and decreases viability in cancer cells^[7].</p> <p>Suramin (300 μg/mL; for 48 hours) induces cells apoptosis, and down-regulates mRNA expression in HeLa cells^[7].</p> <p>Suramin (1 mg/mL; 1 hour) significantly suppresses the phosphorylated ERK1/2^[8].</p> <p>The IC₅₀ values of HO-8910 PM and HeLa are 319 μg/mL, 476 μg/mL, respectively^[7].</p> <p>Suramin blocks viral replication in Vero E6 cells^[5].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Proliferation Assay^[6]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>HO-8910 PM ovarian and Hela cervical cancer cells</td> </tr> <tr> <td>Concentration:</td> <td>50, 100, 200, 300, 400, 500 and 600 μg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>For 24, 48, 72 and 96 hours</td> </tr> <tr> <td>Result:</td> <td>Inhibited cells proliferation in a dose-dependent and time-dependent manner.</td> </tr> </table> <p>Apoptosis Analysis^[6]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>HeLa cells</td> </tr> <tr> <td>Concentration:</td> <td>300 μg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>For 48 hours</td> </tr> </table>			Cell Line:	HO-8910 PM ovarian and Hela cervical cancer cells	Concentration:	50, 100, 200, 300, 400, 500 and 600 μg/mL	Incubation Time:	For 24, 48, 72 and 96 hours	Result:	Inhibited cells proliferation in a dose-dependent and time-dependent manner.	Cell Line:	HeLa cells	Concentration:	300 μg/mL	Incubation Time:	For 48 hours
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Concentration:	300 μg/mL																
Incubation Time:	For 48 hours																

Result:	Induced cells apoptosis.
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Western Blot Analysis^[7]

Cell Line:	PA-SMCs cells
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Concentration:	1 mg/mL
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Incubation Time:	For 1 hours
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Result:	Significantly suppressed the phosphorylated ERK1/2.
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In Vivo

Suramin (10 mg/kg; IV; twice weekly for 3 weeks) reverses established pulmonary hypertension (PH), thereby normalizing the pulmonary artery pressure values and vessel structure^[8].

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

Animal Model:	Adult male Wistar rats (200-225 g) ^[7]
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Dosage:	10 mg/kg
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Administration:	IV; twice weekly for 3 weeks
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Result:	Reversed established PH, thereby normalizing the pulmonary artery pressure values and vessel structure.
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CUSTOMER VALIDATION

- Nat Struct Mol Biol. 2021 Mar;28(3):319-325.
- Clin Transl Med. 2021 Jun;11(6):e485.
- Br J Pharmacol. 2021 Aug 6.
- J Agric Food Chem. 2023 Sep 19.
- Int Immunopharmacol. 2023 May 12;120:110295.

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[9]. Wanchao Yin, et al. Structural basis for inhibition of the SARS-CoV-2 RNA polymerase by suramin. Nat Struct Mol Biol. 2021 Mar;28(3):319-325.

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

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