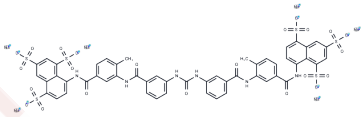
Data Sheet (Cat.No.T2160)

TargetMol

Suramin Sodium Salt

Chemical Properties



CAS No. : 129-46-4

Formula: C51H34N6Na6O23S6

Molecular Weight: 1429.15

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Suramin Sodium Salt (BAY-205) is a sodium salt form of suramin, a polysulphonated naphthylurea with potential antineoplastic activity. Suramin blocks the binding of various growth factors, including insulin-like growth factor I (IGF-I), epidermal growth factor (EGF), platelet-derived growth factor (PDGF), and tumor growth factor-beta (TGF-beta), to their receptors, thereby inhibiting endothelial cell proliferation and migration. This agent also inhibits vascular endothelial growth factor (VEGF)- and basic fibroblast growth factor (bFGF)-induced angiogenesis; retroviral reverse transcriptase; uncoupling of G-proteins from receptors; topoisomerases; cellular folate transport; and steroidogenesis.
Targets(IC50)	Apoptosis,Reverse Transcriptase,Parasite,Phosphatase,SARS-CoV,Sirtuin,Topoisomerase
In vitro	Suramin inhibits cell proliferation and DNA synthesis in cultured HeLa cells. The replication of SV40 DNA is completely abolished by 40 μM suramin. DNA polymerase α is sensitive to lower concentrations of suramin (IC50=8 μM) than is DNA polymerase δ (IC50=36 μM), whereas DNA polymerase β is relatively insensitive to the drug (IC50 of 90 μM)[1]. Suramin is a potent inhibitor of DNA strand exchange and ATPase activities of bacterial RecA proteins. Suramin inhibits RecA-catalysed proteolytic cleavage of the LexA repressor. The mechanism underlying such inhibitory actions of suramin involves its ability to disassemble RecA-single-stranded DNA filaments[2]. Suramin is a potent inhibitor of the nuclear enzyme DNA topoisomerase II. Suramin inhibits purified yeast topoisomerase II with an IC50 of about 5 μM[3].
In vivo	Treatment with suramin shows lower values for pulmonary artery pressure, right ventricular hypertrophy, and distal vessel muscularization on day 21 compared to control rats. Suramin treatment suppresses PA-SMC proliferation and attenuates both the inflammatory response and the deposition of collagen[4].
Kinase Assay	The ATPase assay is performed in a 10 μL reaction mixture containing 20 mM Tris-HCl (pH 7.5), 1 mM DTT, 8 mM MgCl2, 5 μM M13 circular ssDNA, 2.5 μM RecA from the specified bacterial species and increasing concentrations of suramin. The reaction is initiated by the addition of 2 mM [α-32P]ATP, incubated for 30 min at 37°C and stopped by the addition of 25 mM EDTA[2].

Solubility Information

Solubility	DMSO: 252.5 mg/mL (176.68 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (1.4 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.6997 mL	3.4986 mL	6.9972 mL
5 mM	0.1399 mL	0.6997 mL	1.3994 mL
10 mM	0.070 mL	0.3499 mL	0.6997 mL
50 mM	0.014 mL	0.070 mL	0.1399 mL

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

Jindal HK, et al. Suramin affects DNA synthesis in HeLa cells by inhibition of DNA polymerases. Cancer Res. 1990 Dec 15;50(24):7754-7.

Wan Y, Feng B, You Y, et al. Microglial Displacement of GABAergic Synapses Is a Protective Event during Complex Febrile Seizures. Cell Reports. 2020, 33(5): 108346

Nautiyal A, et al. Suramin is a potent and selective inhibitor of Mycobacterium tuberculosis RecA protein and the SOS response: RecA as a potential target for antibacterial drug discovery. J Antimicrob Chemother. 2014 Jul;69(7): 1834-43.

Bojanowski K, et al. Suramin is an inhibitor of DNA topoisomerase II in vitro and in Chinese hamster fibrosarcomacells. Proc Natl Acad Sci U S A. 1992 Apr 1;89(7):3025-9.

Izikki M, et al. The beneficial effect of suramin on monocrotaline-induced pulmonary hypertension in rats. PLoS One. 2013 Oct 15;8(10):e77073.

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