

# PRODUCT INFORMATION



## Suramin (sodium salt)

Item No. 11126

CAS Registry No.: 129-46-4

Formal Name: 8,8'-[carbonylbis[imino-3,1-phenylenecarbonylimino(4-methyl-3,1-phenylene)carbonylimino]]bis-1,3,5-naphthalenetrisulfonic acid, hexasodium salt

Synonyms: BAY 205, Germanin, NF 060

MF:  $C_{51}H_{34}N_6O_{23}S_6 \cdot 6Na$

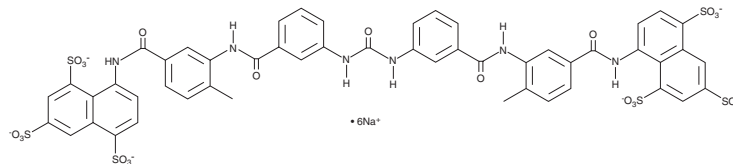
FW: 1,429.1

Purity:  $\geq 98\%$

Supplied as: A solid

Storage: Room temperature

Stability:  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Suramin (sodium salt) is supplied as a solid. A stock solution may be made by dissolving the suramin (sodium salt) in water. The solubility of suramin (sodium salt) in water is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Suramin is a polysulfonated naphthylurea with antiviral, antiparasitic, and anticancer activities.<sup>1</sup> It is negatively charged at physiological pH and therefore binds to various intracellular targets including, but not limited to, ryanodine receptor 1 ( $IC_{50} = 4.9 \mu M$ ), G protein-coupled receptors,  $P_2$  purinergic receptors, PDGF, PKC, transferrin, DNA and RNA polymerases, sirtuins, and various cytokines.<sup>1-3</sup> It reduces Zika virus infectivity in Vero cells ( $IC_{50} = \sim 2.5-5 \mu g/ml$ ).<sup>4</sup> *In vivo*, suramin induces cell cycle arrest at the  $G_2/M$  phase and apoptosis in *L. donovani* promastigotes *in vitro* and reduces hepatic parasitic burden in a mouse model of *L. donovani*-induced visceral leishmaniasis.<sup>5</sup> It also neutralizes the myotoxic effect of basic phospholipase  $A_2$  ( $PLA_2$ ) homolog MjTX-I, a Lys49- $PLA_2$  protein from snake venom, in mouse phrenic-diaphragm preparations.<sup>6</sup> Suramin (60 mg/kg) reduces tumor volume in patient-derived xenograft (PDX) mouse models of malignant mesothelioma.<sup>7</sup> Formulations containing suramin have been used in the treatment of African sleeping sickness.

### References

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3. Charlton, S.J., Brown, C.A., Weisman, G.A., et al. PPADS and suramin as antagonists at cloned P2Y- and P2U- purinoceptors. *Br. J. Pharmacol.* **118**(3), 704-710 (1996).
4. Tan, C.W., Sam, I.-C., Chong, W.L., et al. Polysulfonate suramin inhibits Zika virus infection. *Antiviral Res.* **143**, 186-194 (2017).
5. Khanra, S., Juin, S.K., Jawed, J.J., et al. *In vivo* experiments demonstrate the potent antileishmanial efficacy of repurposed suramin in visceral leishmaniasis. *PLoS Negl. Trop. Dis.* **14**(8), e0008575 (2020).
6. Salvador, G.H.M., Dreyer, T.R., Gomes, A.A.S., et al. Structural and functional characterization of suramin-bound MjTX-I from *Bothrops moojeni* suggests a particular myotoxic mechanism. *Sci. Rep.* **8**(1), 10317 (2018).
7. Chahinian, A.P., Mandeli, J.P., Gluck, H., et al. Effectiveness of cisplatin, paclitaxel, and suramin against human malignant mesothelioma xenografts in athymic nude mice. *J. Surg. Oncol.* **67**(2), 104-111 (1998).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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