Suramin sodium salt

Product Number S 2671

Store at room temperature

Product Description

Molecular Formula: \( C_{51}H_{34}N_6Na_6O_{23}S_6 \)
Molecular Weight: 1429
CAS Number: 129-46-4

Suramin inhibits parasite and human enzymes including trypanosoma glycolytic enzymes, human DNA and RNA polymerases, human reverse transcriptase, ATPase, protein kinase C, and human lysosomal enzymes such as \( \beta \)-glucuronidase. Suramin is a trypanocide used in the treatment of the early stages of African trypanosomiasis and is effective as an anthelmintic in the treatment of onchocerciasis.\(^1\) It has been shown to have activity against HIV, but with disappointing results and has been reported to have some antineoplastic activity.\(^2\) In \textit{in vitro} studies, suramin inhibited the reverse transcriptase of HIV,\(^2,3,4\) HIV infectivity, and the cytopathic effect on helper/inducer T cells.\(^5\)

Suramin is a hexasulfonated naphthylurea compound used as an anti-tumor drug and is a potent inhibitor of human neutrophil elastase, cathepsin G, and proteinase 3.\(^6\) One molecule of elastase binds four molecules of suramin with an inhibitor constant, \( K_i \), of \( 2 \times 10^{-7} \) M. The \( K_i \) for cathepsin G is \( 8 \times 10^{-9} \) M. The \( K_i \) proteinase 3 is \( 5 \times 10^{-7} \) M. Ionic strength increases the \( K_i \) of the elastase suramin complex in a way that suggests that four of the six sulfonate groups of suramin have ionic interactions with basic residues of the enzyme and, at saturation, almost all arginines of elastase form salt bridges with suramin.

The neutrophil proteinase inhibitory activity of suramin may be used to prevent tissue destruction and thrombus formation in diseases where massive infiltration and activation of neutrophils take place.

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

The product is soluble in water (50 mg/ml), yielding a clear, faint yellow solution. It is also soluble in physiological saline, sparingly soluble in 95% ethanol, insoluble in benzene, ether, petroleum ether, and chloroform.\(^3\)

Storage/Stability

Solutions deteriorate on storage and should be used immediately after preparation. Protect product from light.

References

3. The Merck Index, 12th ed., Entry# 9181.

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neutrophils.