
Product Data Sheet

Product Name: Asoxime (chloride)

Cat. No.: GC15438

Chemical Properties

Cas. No. 34433-31-3

Chemical Name 1-[[[4-(aminocarbonyl)pyridinio]methoxy]methyl]-2-[(hydroxyimino)methyl]-pyridinium, dichloride

SMILES O/N=C\C1=CC=CC=[N+]1COC[N+]2=CC=C(C(N)=O)C=C2.[Cl-].[Cl-]Formula $C_{14}H_{16}N_4O_3 \cdot 2Cl$

M.Wt 359.2

Solubility $\leq 10\text{mg/ml}$ in PBS(pH7.2)Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure

Background

IC₅₀: 8.9 μM : blocks AChE in human; 126 μM : inhibits acetylcholinesterase (AChE) in bovine; 160 μM : blocks muscarinic acetylcholine receptor M1, M2, M3 and M4 in mouse.

Asoxime, also known as HI-6, is an asymmetric bis-pyridinium aldoxime and reactivates AChE via nucleophilic attack of oximate anions on organophosphate-AChE conjugates.

AChE, one of the primary targets of organophosphates, is inactivated by organophosphates via reacting covalently with the active center serine, which blocks the hydrolyzation of acetylcholine at peripheral and central synapses. Additionally, the accumulation of acetylcholine leads to an over-stimulation of cholinergic receptors, which disrupts a variety of biological functions.

In vitro: HI-6 showed a bacteriostatic effect on *Francisella tularensis* (*F. tularensis*) and inhibited the growth of *F. tularensis* when treated with 100 mM HI-6 [1].

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

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In vivo: Female BALB/c mice, infected by *F. tularensis*, were administrated subcutaneously with 100 µl HI-6 for ten days. The lower dose of HI-6 yielded in different symptoms and mortality. Compared to mice injected only with tularemia, groups of mice exposed to the lower dose of HI-6 showed a decline in mortality, which can be explained via higher efficacy of bacteriostatic effect while the toxic effect was decreased [1]. Female Wistar rats were treated intramuscularly with HI-6 at a dose of 15.6 or 156 mg/kg for one day. The level of thiobarbituric acid reactive substances was increased, which was triggered by HI-62 [2].

References:

- [1]. Pohanka, M., Pavli, O., Pikula, J., Treml, F., & Kuca, K. Modulation of Tularemia Disease Progress by the Bisquaternary Pyridinium Oxime HI-6. *Acta Veterinaria Brno*. 2010; 79(3): 443-448.
- [2]. Pohanka, M., Sobotka, J., Svobodova, H., & Stetina, R. Sulfur mustard induced oxidative stress and its alteration using a soxime (HI-6). *Interdisciplinary Toxicology*. 2013; 6(4).

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