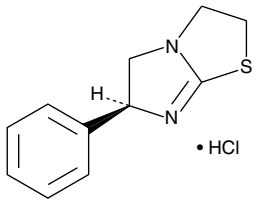
Product Information

Levamisole (hydrochloride)

Item No. 14874

CAS Registry No.: 16595-80-5
Formal Name: (6S)-2,3,5,6-tetrahydro-6-phenyl-imidazo[2,1-b]thiazole, monohydrochloride
Synonyms: NSC 177023, R 12654, L-Tetramisole
MF: $C_{11}H_{12}N_2S \bullet HCl$
FW: 240.8
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 215 nm



Laboratory Procedures

For long term storage, we suggest that levamisole (hydrochloride) be stored as supplied at -20°C. It should be stable for at least two years.

Levamisole (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the levamisole (hydrochloride) in the solvent of choice. Levamisole (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of levamisole (hydrochloride) in these solvents is approximately 11, 3, and 0.1 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of levamisole (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of levamisole (hydrochloride) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Levamisole is a water-soluble imidazothiazole derivative with anti-helminthic actions.[1] It selectively activates nematode acetylcholine receptor ion channels in nerve and muscle (EC_{50} = 6 µM).[2] In higher animals, levamisole inhibits tissue non-specific alkaline phosphatase (K_i = 16 µM), an enzyme that is increased during osteoarthritis.[3] This compound has immunomodulating effects when used in immunocompromised individuals.[4,5] Levamisole is used as a cocaine adulterant, which can result in cutaneous vasculitis with neutropenia or leukopenia.[6]

References

1. Martin, R.J., Robertson, A.P., Buxton, S.K., *et al.* Levamisole receptors: A second awakening. *Trends Parasitol.* **28(7)**, 289-296 (2012).
2. Charvet, C.L., Robertson, A.P., Cabaret, J., *et al.* Selective effect of the anthelmintic bephenium on *Haemonchus contortus* levamisole-sensitive acetylcholine receptors. *Invert. Neurosci.* **12(1)**, 43-51 (2012).
3. Li, L., Chang, L., Pellet-Rostaing, S., *et al.* Synthesis and evaluation of benzo[b]thiophene derivatives as inhibitors of alkaline phosphatases. *Bioorg. Med. Chem.* **17(20)**, 7290-7300 (2009).
4. Sayad, B., Alavian, S.M., Najafi, F., *et al.* Effects of oral levamisole as an adjuvant to hepatitis B vaccine in HIV/AIDS patients: A randomized controlled trial. *Hepat. Mon.* **12(9)**, 6234 (2012).
5. Fabrizi, F., Dixit, V., Messa, P., *et al.* Meta-analysis: Levamisole improves the immune response to hepatitis B vaccine in dialysis patients. *Aliment. Pharmacol. Ther.* **32(6)**, 756-762 (2010).
6. Pillow, M.T. and Hughes, A. Levamisole-adulterated cocaine induced vasculitis with skin ulcerations. *West J. Emerg. Med.* **14(2)**, 149-150 (2013).

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