

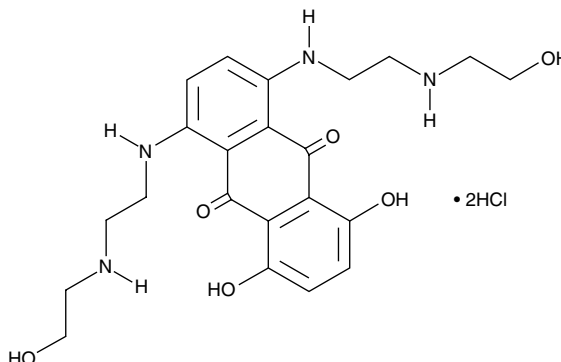
Product Information



Mitoxantrone (hydrochloride)

Item No. 14842

CAS Registry No.: 70476-82-3
Formal Name: 1,4-dihydroxy-5,8-bis[[2-[(2-hydroxyethyl)amino]ethyl]amino]-9,10-anthracenedione, dihydrochloride
Synonyms: NCI 301739, Novantrone, NSC 301739
MF: $C_{22}H_{28}N_4O_6 \cdot 2HCl$
FW: 517.4
Purity: $\geq 95\%$
Stability: ≥ 2 years at $-20^\circ C$
Supplied as: A crystalline solid
UV/Vis.: λ_{max} : 222, 242, 276, 610, 662 nm



Laboratory Procedures

For long term storage, we suggest that mitoxantrone (hydrochloride) be stored as supplied at $-20^\circ C$. It should be stable for at least two years.

Mitoxantrone (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the mitoxantrone (hydrochloride) in the solvent of choice. Mitoxantrone (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of mitoxantrone (hydrochloride) in these solvents is approximately 0.12, 5, and 3.3 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 mitoxantrone (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of mitoxantrone (hydrochloride) in PBS, pH 7.2, is approximately 1.4 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Mitoxantrone is an anthraquinone that intercalates in DNA and inhibits topoisomerase II ($IC_{50} = 5.3 \mu M$), thus inhibiting cell proliferation.^{1,2} It also inhibits HIV-1 integrase ($IC_{50} = 3.8 \mu M$).³ Mitoxantrone is exported from cells in an ATP- and glutathione-dependent manner by multidrug resistance protein -1.⁴ This compound has found use in various forms of cancer and in multiple sclerosis.⁵⁻⁷

References

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3. Carlson, H.A., Masukawa, K.M., Rubins, K., *et al.* Developing a dynamic pharmacophore model for HIV-1 integrase. *J. Med. Chem.* **43(11)**, 2100-2114 (2000).
4. Morrow, C.S., Peklak-Scott, C., Bishwokarma, B., *et al.* Multidrug resistance protein 1 (MRP1, ABCC1) mediates resistance to mitoxantrone *via* glutathione-dependent drug efflux. *Mol. Pharmacol.* **69(4)**, 1499-1505 (2006).
5. Garcia, J.A. and Rini, B.I. Castration-resistant prostate cancer: Many treatments, many options, many challenges ahead. *Cancer* **118(10)**, 2583-2593 (2012).
6. Lu, E., Wang, B.W., Guimond, C., *et al.* Safety of disease-modifying drugs for multiple sclerosis in pregnancy: Current challenges and future considerations for effective pharmacovigilance. *Expert Rev. Neurother.* **13(3)**, 251-260 (2013).
7. Marriott, J.J., Miyasaki, J.M., Gronseth, G., *et al.* Evidence report: The efficacy and safety of mitoxantrone (Novantrone) in the treatment of multiple sclerosis. *Neurology* **74(18)**, 1463-1470 (2010).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/14842

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

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