

Datasheet

Mitoxantrone 2HCl

Product Name	Mitoxantrone 2HCl
Catalogue Number	BSV-S2485
Chemical Formula	C ₂₂ H ₂₉ ClN ₄ O ₆ .2HCl
Function	Topoisomerase Inhibitor
CAS No.:	70476-82-3

Description:

Mitoxantrone is a type II **topoisomerase** inhibitor with **IC₅₀** of 2.0 µM, 0.42 mM for HepG2 and MCF-7/wt cells, respectively.

Product Details:

Target: Topoisomerase II [\[1\]](#)

Chemical name: 1,4-dihydroxy-5,8-bis(2-(2-hydroxyethylamino)ethylamino)anthracene-9,10-dione dihydrochloride

Formula: C₂₂H₂₉ClN₄O₆.2HCl

Molecular weight: 517.4

Purity: 99.36 %

Solubility: 89 mg/mL (DMSO), 89 mg/mL (water)

Storage: 3 years -20°C powder, 2 years -80°C in solvent

Preparing stock solutions

Concentration/ Mass	1 mg	5 mg	10 mg
1 mM	1.9327 mL	9.6637 mL	19.3274 mL
5 mM	0.3865 mL	1.9327 mL	3.8655 mL
10 mM	0.1933 mL	0.9664 mL	1.9327 mL

50 mM	0.0387 mL	0.1933 mL	0.3865 mL
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Biological Activity:

In vitro:

Mitoxantrone induces DNA fragmentation and the proteolytic cleavage of poly(ADP-ribose) polymerase (PARP), a marker of the activation of caspases, in all the patients studied, demonstrating that the cytotoxic effect of mitoxantrone is due to induction of apoptosis. ^[1] Mitoxantrone activates NFkappaB and stimulates IkappaBalph degradation in the promyelocytic leukemia cell line HL60 but not in the variant cells, HL60/MX2 cells, which lack the beta isoform of topoisomerase II and express a truncated alpha isoform that results in an altered subcellular distribution. ^[2] Mitoxantrone inhibits proliferation of activated PBMCs, B lymphocytes, or antigen-specific T-cell lines (TCLs) stimulated on antigen-presenting cells (APCs) in a dose-dependent manner. Mitoxantrone induces apoptosis of PBMCs, monocytes and DCs at low concentrations, whereas higher doses causes cell lysis. ^[3]

In vivo:

Mitoxantrone transiently decreases the growth rate of HID xenografts in mice but does not affect that of PAC120 xenografts. ^[4] Mitoxantrone results in the severity of the cardiac lesions and the nephropathy and the intestinal toxicity in spontaneously hypertensive rats. Mitoxantrone and iron(III) form a strong 2:1 complex, in which mitoxantrone may be acting as a tridentate ligand. ^[5]

References:

- [\[1\] Seitz M. *Curr Opin Rheumatol*, 1999, 11\(3\), 226-232.](#)
- [\[2\] Hirata S, et al. *Arthritis Rheum*, 1989, 32\(9\), 1065-1073.](#)
- [\[3\] Segal R, et al. *Semin Arthritis Rheum*, 1990, 20\(3\), 190-200.](#)
- [\[4\] Hirata S, et al. *Arthritis Rheum*, 1989, 32\(9\), 1065-1073.](#)
- [\[5\] Genestier L, et al. *J Clin Invest*, 1998, 102\(2\), 322-328.](#)
- [\[6\] Cronstein BN, et al. *J Clin Invest*, 1993, 92\(6\):2675-2682.](#)