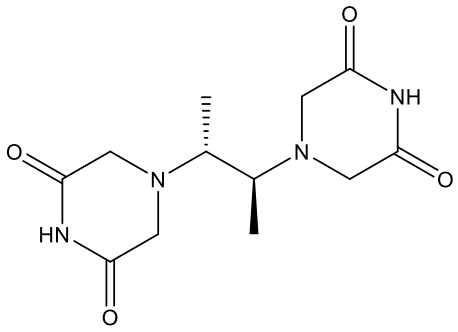
Catalog #10-5056

ICRF-193

CAS# 21416-88-6

Meso-4,4'-(2,3-butanediyl)-bis(2,6-piperazinedione)

Lot # E102059



ICRF-193 is a topoisomerase II poison.[1] Toposiomerase poisons are a special subclass of topoisomerase inhibitors that stabilize topoisomerase-DNA strand passing intermediates and thus cause the topoisomerases to become a cytotoxic DNA-damaging agent.[1] It readily induces DNA strand breaks in V79 and irs-2 Chinese hamster lung fibroblasts via a novel mechanism.[2] Displays cardioprotective (against anthracycline toxicity)[3] and anti-inflammatory effects via reduction of IL-1β secretion by macrophages[4]. An important tool for studying the cellular response to DNA double-strand breaks.[5]

1) Huang *et al.* (2001), *Topoisomerase II Poisoning by ICRF-193*; J. Biol. Chem. **276** 44488
2) Hajji *et al.* (2003), *DNA strand breaks induced by the anti-topoisomerase bis-dioxopiperazine ICRF-193*; Mutat. Res. **530** 35
3) Jirkovskai *et al.* (2021), *Structure-Activity Relationship Study of Dexrazoxane Analogues Reveals ICRF-193 as the Most Potent Bisdioxopiperazine against Anthracycline Toxicity to Cardiomyocytes Due to Its Strong Topoisomerase IIß Interactions*; J. Med. Chem. **64** 3997
4) Brindle *et al.* (2024), *The Bisdioxopiperazine ICRF-193 Attenuates LPS-induced IL-1ß Secretion by Macrophages*; Inflammation **47** 84
5) Morotomi-Yano *et al.* (2018), *Dynamic behavior of DNA topoisomerase IIß in response to DNA double-strand breaks*; Sci. Rep. **8** 10344

PHYSICAL DATA

Molecular Weight:	282.30
Molecular Formula:	$C_{12}H_{18}N_4O_4$
Purity:	>98% (TLC)
	NMR: (Conforms)
Solubility:	DMSO (4 mg/mL)
Physical Description:	Off-white solid
Storage and Stability:	Store as supplied at -20°C for up to 2 years from the date of purchase. Solutions in DMSO may be stored at -20°C for up to 2 months.

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