

# Product Information



## Dexrazoxane

Item No. 14632

**CAS Registry No.:** 24584-09-6

**Formal Name:** 4,4'-[*(1S)-1-methyl-1,2-ethanediyl*]bis-2,6-piperazinedione

**Synonyms:** ICRF 187, NSC 169780, Totect®, Zincard

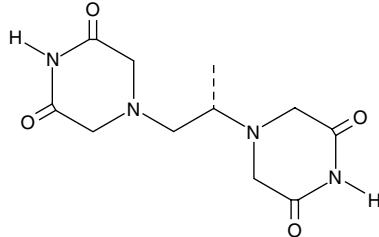
**MF:** C<sub>11</sub>H<sub>16</sub>N<sub>4</sub>O<sub>4</sub>

**FW:** 268.3

**Purity:** ≥98%

**Stability:** ≥2 years at -20°C

**Supplied as:** A crystalline solid



### Laboratory Procedures

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

Dexrazoxane is supplied as a crystalline solid. A stock solution may be made by dissolving the dexrazoxane in the solvent of choice. Dexrazoxane is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of dexrazoxane in these solvents is approximately 10 and 5 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 dexrazoxane can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of dexrazoxane in PBS, pH 7.2, is approximately 0.25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Dexrazoxane is an intracellular iron chelator and an inhibitor of topoisomerase IIα.<sup>1</sup> Through these activities, dexrazoxane is highly protective in reducing anthracycline-induced cardiotoxicity and extravasation injury.<sup>2</sup> Dexrazoxane has also been shown to act as an antioxidant that scavenges hydroxyl (IC<sub>50</sub> = 2.1 mM), superoxide (IC<sub>50</sub> = 0.4 mM), lipid (IC<sub>50</sub> = 4.4 mM), 2,2-diphenyl-1-picrylhydrazyl (IC<sub>50</sub> = 3.5 μM), and 2,2'-azino-bis(3-ethylbenzthiazoline-6-sulphonic acid) (IC<sub>50</sub> = 3.8 mM) free radicals.<sup>3</sup>

### References

1. Yan, T., Deng, S., Metzger, A., *et al.* Topoisomerase IIα-dependent and -independent apoptotic effects of dexrazoxane and doxorubicin. *Mol. Cancer Ther.* **8**(5), 1075-1085 (2009).
2. Kurz, T., Grant, D., Andersson, R.G.G., *et al.* Effects of MnDPDP and ICRF-187 on doxorubicin-induced cardiotoxicity and anticancer activity. *Transl. Oncol.* **5**(4), 252-259 (2012).
3. Junjing, Z., Yan, Z., and Baolu, Z. Scavenging effects of dexrazoxane on free radicals. *J. Clin. Biochem. Nutr.* **47**(3), 238-245 (2010).

### Related Products

For a list of related products please visit: [www.caymanchem.com/catalog/14632](http://www.caymanchem.com/catalog/14632)

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