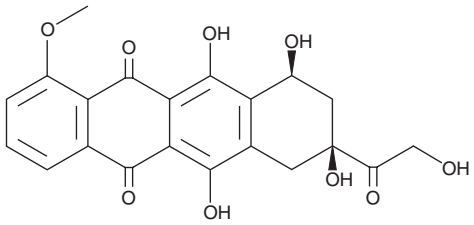
PRODUCT INFORMATION

Doxorubicinone

Item No. 21693

CAS Registry No.:	24385-10-2
Formal Name:	(8S,10S)-7,8,9,10-tetrahydro-6,8,10,11-tetrahydroxy-8-(2-hydroxyacetyl)-1-methoxy-5,12-naphthacenedione
Synonyms:	Adriamycin aglycone, Adriamycinone, aglycone-DOX, Doxorubicin aglycone, Epirubicin aglycone
MF:	$C_{21}H_{18}O_9$
FW:	414.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 234, 252, 288, 496 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Doxorubicinone is supplied as a crystalline solid. A stock solution may be made by dissolving the doxorubicinone in the solvent of choice. Doxorubicinone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of doxorubicinone in these solvents is approximately 5 mg/ml.

Description

Doxorubicinone is a metabolite of the anthracycline antitumor antibiotic doxorubicin (Item No. 15007).[1,2] Doxorubicinone inhibits mitochondrial succinoxidase from bovine heart and reduces the mitochondrial inner membrane potential in rat heart and liver mitochondria in a concentration-dependent manner.[3,4] Doxorubicinone (40 µM) increases pentose phosphate pathway flux by 45% and reduces activity of glutathione peroxidase (GPX) and superoxide dismutase (SOD) by 17 and 60%, respectively, in human erythrocytes.[5] It also induces cytotoxicity in patient-derived ovarian cancer colonies in a concentration-dependent manner.[2]

References

1. Patel, S., Sprung, A.U., Keller, B.A., *et al.* Identification of yeast DNA topoisomerase II mutants resistant to the antitumor drug doxorubicin: Implications for the mechanisms of doxorubicin action and cytotoxicity. *Mol. Pharmacol.* **52(4)**, 658-666 (1997).
2. Ozols, R.F., Willson, J.K.V., Weltz, M.D., *et al.* Inhibition of human ovarian cancer colony formation by adriamycin and its major metabolites. *Cancer Res.* **40(11)**, 4109-4112 (1980).
3. Kishi, T., Watanabe, T., and Folkers, K. Bioenergetics in clinical medicine: Prevention by forms of coenzyme Q of the inhibition by adriamycin of coenzyme Q_{10}-enzymes in mitochondria of the myocardium. *Proc. Natl. Acad. Sci. U.S.A.* **73(12)**, 4653-4656 (1976).
4. Al-Nasser, I.A. Prevention of adriamycin aglycone-induced changes of inner mitochondrial membrane permeability by cyclosporin A. *Med. Sci. Res.* **25(4)**, 249-251 (1997).
5. Misiti, F., Giardina, B., Mordente, A., *et al.* The secondary alcohol and aglycone metabolites of doxorubicin alter metabolism of human erythrocytes. *Braz. J. Med. Biol. Res.* **36(12)**, 1643-1651 (2003).

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