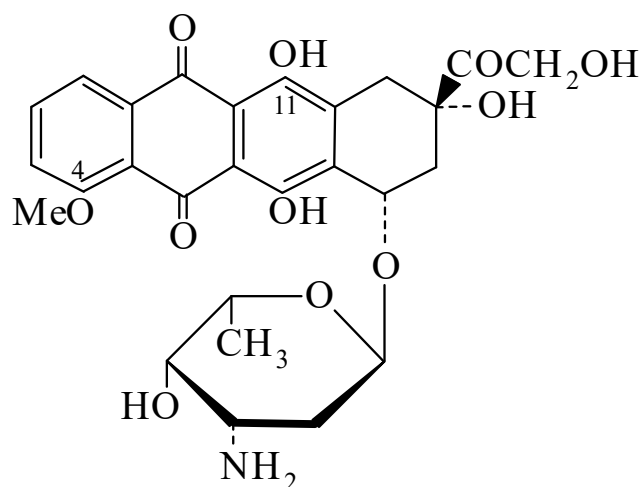




>>Entry Name: Adriamycin, 8Cl

Synonym(s): Doxorubicin, BAN, INN, USAN. 14-Hydroxydaunomycin. Adriacin. Adriblastin. Caelyx. Dox. Doxil. Farmiblastina. FI 106. K 1039. KW 125. NSC 123127



CAS Registry Number: 23214-92-8

Related CAS Registry Numbers(s): 63950-06-1

Molecular Formula: C₂₇H₂₉NO₁₁

Molecular Weight: 543.526

Accurate Mass: 543.174064

Percentage Composition: C 59.67%; H 5.38%; N 2.58%; O 32.38%

General Statement: Anthracycline antibiotic. Numbering scheme and numbering of derivs. is variable

Biological Source: Metab. of *Streptomyces peucetius*

Biological Use/Importance: Antineoplastic antibiotic; shows anti-HIV activity. Used in the treatment of ovarian cancer and AIDS related Kaposi sarcoma

Development Status: Approved 1995

Solubility: BERDY SOL: Sol. MeOH, acids, CHCl₃; poorly sol. H₂O, hexane

Calculated Log P Data: Log P -1.45 (uncertain value) (calc)

UV: [acid] λ_{max} 234 (ε 40700); 252 (ε 27700); 290 (ε 9400); 480 (ε 13300); 500 (ε 13300); 530 (ε 7200) (pH 4 MeOH) (Derep) [base] λ_{max} 237 (ε 26700); 250 (ε 32000); 287 (ε 6000); 362 (ε 4850); 560 (ε 13900); 597 (ε 12900) (MeOH/NaOH) (Derep) [neutral] λ_{max} 234 (ε 40700); 252 (ε 27700); 290 (ε 9400); 480 (ε 13300); 500 (ε 13300); 530 (ε 7200) (pH 4 MeOH) (Derep) [neutral] λ_{max} 233 (E1%/1cm 658); 253 (E1%/1cm 440); 290 (E1%/1cm 145); 477 (E1%/1cm 225); 495 (E1%/1cm 223); 530 (E1%/1cm 124) (MeOH) (Berdy)

Other Data: Acid hydrol. affords Daunomamine and Adriamycinone

Hazard & Toxicity: Local and systemic adverse effects reported when used therapeutically incl. bone-marrow depression, alopecia, gastrointestinal effects, and dose-related cardiotoxicity. Probable human carcinogen. LD₅₀ (mus, orl) 570 mg/kg. LD₅₀ (mus, ivn) approx. 9 mg/kg. Exp. carcinogenic, reprod. and teratogenic effects

>>Derivative: Hydrochloride

Synonym(s): Doxorubicin hydrochloride, JAN, USAN

CAS Registry Number: 25316-40-9

Physical Description: Orange-red needles

Melting Point: Mp 204-205 dec.°

Optical Rotation: [α]_D²⁰ +248 (c, 0.1 in MeOH)

Hazard & Toxicity: Systemic adverse effects reported when used therapeutically incl. nephrotoxic, cardiotoxic and pulmonary effects. LD₅₀ (mus, orl) 698 mg/kg. LD₅₀ (mus, ivn) 1.25 mg/kg. Exp. reprod. effects

Aldrich: 86036-0

Fluka: 44584

Sigma: D5642

>>Derivative: *N*-L-Leucyl

see Leurubicin, LRR43-Z

>>Derivative: *O*¹⁴-Pentanoyl, *N*-trifluoroacetyl

see Valrubicin, DYD12-K