Percentage Composition: C 59.44%; H 5.73%; N 2.57%; O 32.26%
Biological Source: Prod. by *Streptomyces peuceticus-caesius*. Metab. of adriamycin
Biological Use/Importance: Cytotoxic agent
Physical Description: Red powder

>>**Derivative:** 4'-Epimer
Synonym(s): Epirubicin, BAN, INN. Ellence. NSC 256942. IMI 28

CAS Registry Number: 56420-45-2

Molecular Formula: $C_{26}H_{27}NO_{10}$
Molecular Weight: 513.5
Accurate Mass: 513.163499
Percentage Composition: C 60.82%; H 5.30%; N 2.73%; O 31.16%
Biological Use/Importance: Antineoplastic antibiotic. Used in the treatment of breast cancer
Development Status: Approved 1999
Calculated Log P Data: Log P –1.45 (uncertain value) (calc)
Other Data: Apparently incorrectly described as β-anomer in CAS
Hazard & Toxicity: Adverse effects similar to Adriamycin when used therapeutically. LD_{50} (rat, ivn) 14.3 mg/kg

>>**Derivative:** 4'-Epimer; hydrochloride
Synonym(s): Epirubicin hydrochloride, USAN. Farmorubicin. Pharmorubicin

CAS Registry Number: 56390-09-1
Physical Description: Red cryst.
Development Status: Launched 1984
Melting Point: Mp 185° (dec.)
Optical Rotation: $[\alpha]_D$ +274 (c, 0.01 in MeOH)

>>**Derivative:** 4'-Deoxy
Synonym(s): Esorubicin, INN. 4'-Deoxydoxorubicin. IMI 58. NSC 267469

CAS Registry Number: 63521-85-7

Molecular Formula: $C_{27}H_{29}NO_{10}$
Molecular Weight: 527.527
Accurate Mass: 527.179149
Percentage Composition: C 61.47%; H 5.54%; N 2.66%; O 30.33%
Biological Use/Importance: Antineoplastic agent
Melting Point: Mp 163° (as hydrochloride)
Optical Rotation: $[\alpha]_D^{20}$+320 (c, 0.05 in MeOH)
Calculated Log P Data: Log P –0.99 (uncertain value) (calc)

>>**Derivative:** 4'-Deoxy, 4'-iodo
Synonym(s): 4'-Deoxy-4'-iodoadriamycin. 4'-Deoxy-4'-iododoxorubicin

CAS Registry Number: 83997-75-5
Extra CAS Registry Numbers(s): 83943-83-3
Molecular Formula: $C_{27}H_{28}INO_{10}$
Molecular Weight: 653.423
Accurate Mass: 653.075797
Percentage Composition: C 49.63%; H 4.32%; I 19.42%; N 2.14%; O 24.49%
Biological Use/Importance: Analogue of Adriamycin exhibiting antitumour avtivity
Physical Description: Monohydrate (as hydrochloride)
Melting Point: Mp 137-138° (hydrochloride monohydrate)
Optical Rotation: $[\alpha]_D^{20}$+160 (c, 0.05 in MeOH)