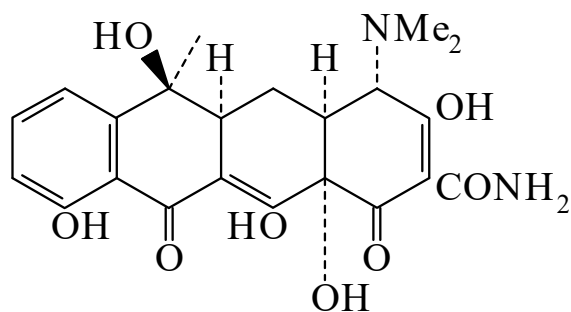




>>Entry Name: Tetracycline, BAN, INN

Synonym(s): 4-(Dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,6,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-2-naphthacenecarboxamide, 9Cl. **Achromycin**‡. Ambramycin. Cytome. Orlycycline. Panmycin. Quatrimycin. Resteclin. Tetrabid



CAS Registry Number: 60-54-8

Related CAS Registry Numbers(s): 79-85-6 6416-04-2

Molecular Formula: C₂₂H₂₄N₂O₈

Molecular Weight: 444.44

Accurate Mass: 444.153268

Percentage Composition: C 59.46%; H 5.44%; N 6.30%; O 28.80%

Biological Source: Prod. by *Streptomyces* spp.

Use/Importance: Antiamoebic, antibacterial and antirickettsial antibiotic. Used as a 1mM aq. soln. for fluorimetric detn. of Al, Be; fluorescent indicator in titrimetric detn. of Ca, Sr

Physical Description: Cryst. (toluene)

Melting Point: Mp 170-175 dec.°

Optical Rotation: $[\alpha]_D^{25}$ -239 (MeOH)

Solubility: BERDY SOL: Sol. acids, bases, CHCl₃, MeOH; fairly sol. Et₂O, C₆H₆; poorly sol. hexane, H₂O

pKa Value: pK_{a1} 3.3; pK_{a2} 7.68; pK_{a3} 9.69 (25°, H₂O) pK_{a1} 2.07; pK_{a2} 6.84; pK_{a3} 8.75; pK_{a4} 10.27; pK_{a5} 14.45

Calculated Log P Data: Log P -1.86 (calc)

UV: [acid] λ_{max} 220 (ε 13000); 268 (ε 18000); 355 (ε 13300) (0.1N HCl) (Derep) [base] λ_{max} 247 (ε 18600); 265 (ε 17800); 375 (ε 16800) (MeOH/NaOH) (Derep) [neutral] λ_{max} 270 (ε 18600); 370 (ε 15800) (MeOH) (Derep) [neutral] λ_{max} 269 (E1%/1cm 271); 365 (E1%/1cm 272) (MeOH) (Berdy) [acid] λ_{max} 220 (ε 13000); 268 (ε 18040); 355 (ε 13320) (HCl) (Berdy) [base] λ_{max} 246 (ε 17380); 372 (ε 15850) (NAOH) (Berdy)

Other Data: Other salts used as antibiotics

Hazard & Toxicity: Gastrointestinal and other adverse effects reported when used therapeutically. LD₅₀ (rat, orl) 807 mg/kg. Exp. reprod. and teratogenic effects ; BERDY HAZD : LD₅₀ (mus, ivn) 162 mg/kg , LD₅₀ (mus, ipr) 355 mg/kg , LD₅₀ (mus, scu) 400 mg/kg , LD₅₀ (mus, orl) 4250 mg/kg

Fluka: 87128

Sigma: T3258

>>Derivative: Hydrochloride

Synonym(s): Tetracycline hydrochloride, USAN. Economycin. Dumocyclin. Neocycline B. Hostacyclin. Many other names

CAS Registry Number: 64-75-5

Physical Description: Cryst. (butanol/HCl)

Melting Point: Mp 214 dec.°

Optical Rotation: $[\alpha]_D^{25}$ -257.9 (c, 0.5 in 0.1N HCl)

Other Data: Component of Tetrastatin

Hazard & Toxicity: LD₅₀ (rat, orl) 6443 mg/kg. Exp. reprod. and teratogenic effects

Aldrich: 25016-3

Fluka: 87130

Sigma: T3383

>>Derivative: Phosphate complex

Synonym(s): Tetracycline phosphate complex, BAN, USAN. Tetrex. Many other names

CAS Registry Number: 1336-20-5

Use/Importance: Antibiotic

Physical Description: Yellow powder

Other Data: Compound of Azotrex and Comycin

Sigma: T3889

>>Derivative: 4-Epimer; hydrochloride

Synonym(s): Epitetracycline hydrochloride, USAN

Other Data: Component of Topicycline

References: