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THIRTEENTH EDITION

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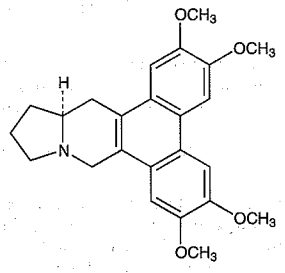
***dl*-Form.** Needles from chloroform + methanol, mp 219-221°.

***l*-Form.** Crystals from methanol, dec 218-220°. uv max: 263, 342, 360 nm (log ε 4.81, 3.25, 3.09). $[\alpha]_D^{24}$ −45° (c = 0.74 in chloroform). pKa (50% aq ethanol): 6.7.

***d*-Form.** Crystals from methanol, mp 220-222°. $[\alpha]_D^{22}$ +20.5°.

9899. Tylophorine. [482-20-2] (13a*S*)-9,11,12,13,13a,-14-Hexahydro-2,3,6,7-tetramethoxydibenzo[*f,h*]pyrrolo[1,-2-*b*]isoquinoline; 2,3,6,7-tetramethoxyphenanthro[9,10:6′,7′]-indolizidine. $C_{24}H_{27}NO_4$; mol wt 393.47. C 73.26%, H 6.92%, N 3.56%, O 16.26%. Major alkaloid from *Tylophora asthmatica* Wight *et* Arn., *Asclepiadaceae.* Also found in other *Asclepiadaceae, Moraceae, Urticaceae* and *Lauraceae.* Naturally occurring form originally isolated and reported to be levorotatory; later corrected to dextrorotatory. Isoln: A. N. Ratnagiriswaran, K. Venkatachalam, *Indian J. Med. Res.* **22,** 433 (1935); R. N. Chopra *et al., Arch. Pharm.* **275,** 236 (1937); T. R. Govindachari *et al., J. Chem. Soc.* **1954,** 2801. Structure: *eidem, Tetrahedron* **9,** 53 (1960). Absolute configuration: *eidem, J. Chem. Soc. Perkin Trans. I* **1974,** 1161. Synthesis of the *dl*-form: *eidem, Chem. & Ind. (London)* **1960,** 664; N. A. Khatri *et al., J. Am. Chem. Soc.* **103,** 6387 (1981). Synthesis and verification of dextrorotation of naturally occurring form: T. F. Buckley 3rd, H. Rapoport, *J. Org. Chem.* **48,** 4222 (1983); J. E. Nordlander, F. G. Njoroge, *ibid.* **52,** 1627 (1987). Stereoselective synthesis of *l*-form: M. Ihara *et al., Tetrahedron Letters* **29,** 4135 (1988). Biosynthesis: Mulchandani *et al., Phytochemistry* **8,** 1931 (1969); *ibid* **10,** 1047 (1971); D. S. Bhakuni, V. K. Mangla, *Tetrahedron* **37,** 401 (1981). Pharmacology: C. Gopalakrishnan *et al., Indian J. Med. Res.* **69,** 513 (1979); **71,** 940 (1980).

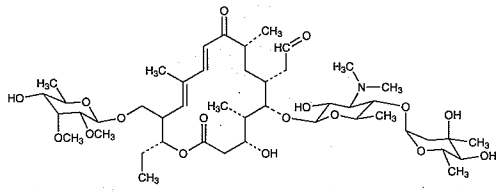


Crystals, dec 282-284°. $[\alpha]_D^{23}$ +15° (c = 0.7 in chloroform); $[\alpha]_D^{21}$ +73° (c = 0.7 in chloroform). uv max in ethanol: 257, 286, 339, 356 nm (log ε 4.7, 4.42, 3.28, 3.19). Unstable in solutions, decomposition with yellowing sets in promptly accompanied by decreasing rotatory strength.

***l*-Form.** Colorless crystals, dec 286-287°. $[\alpha]_D^{27}$ −11.6° (c = 1.07 in chloroform). uv max 255, 290, 340, 352 nm (log ε 4.74, 4.49, 3.30, 2.93). Sol in chloroform; slightly sol in abs alc, ether, cold benzene. Practically insol in water.

***dl*-Form.** Crystals from chloroform + ethanol, mp 292°.

9900. Tylosin. [1401-69-0] Tylan. $C_{46}H_{77}NO_{17}$; mol wt 916.10. C 60.31%, H 8.47%, N 1.53%, O 29.69%. Macrolide antibiotic isolated from a strain of *Streptomycetes fradiae* found in soil from Thailand: Hamill *et al., Antibiot. & Chemother.* **11,** 328 (1961); *eidem,* **US 3178341** (1965 to Lilly). Prodn in batch and chemostat cultures: P. P. Gray, S. Bhuwapathanapun, *Biotech. Bioeng.* **22,** 1785 (1980). Partial structure: Morin, Gorman, *Tetrahedron Letters* **1964,** 2339. Structure: Morin *et al., ibid.* **1970,** 4737; Achenbach *et al., Ber.* **108,** 2481 (1975). Configurational study: S. Omura *et al., Tetrahedron Letters* **1977,** 1045. Abs config: *eidem, J. Antibiot.* **33,** 915 (1980); N. D. Jones *et al., ibid.* **35,** 420 (1982). Synthesis of ***tylonolide***, the aglycone: S. Masamune *et al., J. Am. Chem. Soc.* **98,** 7874 (1976); K. Tatsuta *et al., Tetrahedron Letters* **22,** 3997 (1981). Relationship of ribosomal binding and antibacterial properties: J. W. Corcoran *et al., J. Antibiot.* **30,** 1012 (1977). Biosynthesis studies: E. T. Seno *et al., Antimicrob. Ag. Chemother.* **11,** 455 (1977); S. Omura *et al., J. Antibiot.* **31,** 254 (1978).

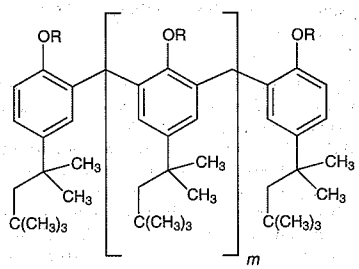


Crystals from water, mp 128-132°. $[\alpha]_D^{25}$ −46° (c = 2 in methanol). uv max: 282 nm ($E_{1cm}^{1\%}$ 245). Soly in water at 25°: 5 mg/ml. Sol in lower alcohols, esters and ketones, in chlorinated hydrocarbons, benzene, ether. Solns are stable at pH 4-9; at pH <4 another active compd, ***desmycosin*** is formed.

Hydrochloride. $C_{46}H_{77}NO_{17}$.HCl. Crystals from ethanol + ether, mp 141-145°.

THERAP CAT (VET): Antibacterial.

9901. Tyloxapol. [25301-02-4] 4-(1,1,3,3-Tetramethylbutyl)phenol polymer with formaldehyde and oxirane; oxyethylated tertiary octylphenol formaldehyde polymer; *p*-isooctylpolyoxyethylenephenol formaldehyde polymer; tyloxypal; Alevaire; Superinone; Triton A-20; Triton WR-1339. Nonionic detergent with surface-tension-reducing properties. Prepn: Bock, Rainey, **US 2454541** (1948 to Rohm & Haas); J. W. Cornforth *et al., Nature* **168,** 150 (1951). Use to induce exptl hyperlipidemia: A. Kellner *et al., J. Exp. Med.* **93,** 373 (1951); P. E. Schurr *et al., Lipids* **7,** 68 (1972). Use as ophthalmic excipient: D. E. Guttman *et al., J. Pharm. Sci.* **50,** 305 (1961). Phase behavior of mixtures with water: K. Westesen, *Int. J. Pharm.* **102,** 91 (1994); K. Westesen, M. H. J. Koch, *ibid.* **103,** 225 (1994). Tissue distribution and excretion: R. L. DeAngelis *et al., Xenobiotica* **25,** 521 (1995).



R = $(CH_2CH_2O)_xH$
x = 8 - 10
m < 6

d^{20} 1.0963. Cloud point: 92-97°. Slowly but freely misc with water. Sol in benzene, toluene, chloroform, carbon tetrachloride, carbon disulfide, acetic acid. Alkaline pH. Oxidized by metals.

Combination with colfosceril palmitate and hexadecanol, *see* Exosurf®

USE: Pharmaceutic aid (dispersing agent; excipient). To induce exptl hyperlipidemia in animal models.

THERAP CAT: Mucolytic.

9902. Tymazoline. [24243-97-8] 4,5-Dihydro-2-[[5-methyl-2-(1-methylethyl)phenoxy]methyl]-1*H*-imidazole; 2-[(thymyloxy)methyl]-2-imidazoline; 2-(thymyloxymethyl)glyoxalidine; 2-[(*p*-mentha-1,3,5-trien-2-yloxy)methyl]-2-imidazoline. $C_{14}H_{20}N_2O$; mol wt 232.32. C 72.38%, H 8.68%, N 12.06%, O 6.89%. Prepd from an alkyl thymyloxyacetimidate and ethylenediamine: Sonn, **US 2149473** (1939 to Ciba); Djerassi,