

Non-alkaloidal Components of *Tylophora**hirsuta*

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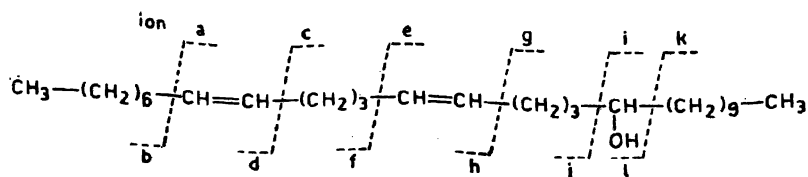
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RECENTLY, the isolation of phenanthroindolizidine alkaloids from the dried aerial parts of *Tylophora hirsuta* has been reported by us¹. Some of these alkaloids possess anticancer and antiamebic properties². The isolation and characterisation of non-alkaloidal constituents of *T. hirsuta* are reported here.

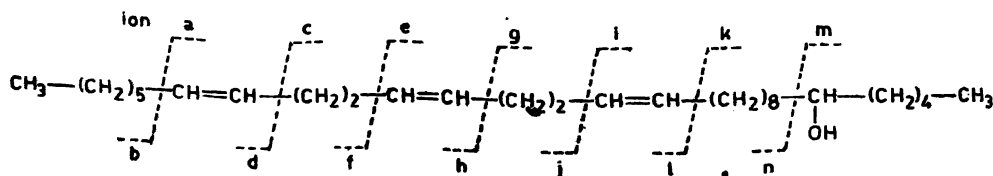
The dried and powdered aerial parts (750 g) of *T. hirsuta* were exhaustively extracted with chloroform. The dried extract was treated with 2 *N* HCl to remove alkaloids and the undissolved portion was subjected to column chromatography over silica gel, eluted with petrol, chloroform and methanol in order of increasing polarities. The constituents have been characterised mainly from their spectral data.

Octacos-15,20-dien-11-ol (1): The residue from the petrol eluate on crystallisation from petrol yielded colourless crystals (65 mg), m.p. 87–89°; ν_{max} (KBr) 3 450, 2 920, 2 840, 2 340, 1 475, 1 465, 1 185 and 1 175 cm^{-1} ; δ (60 MHz; CDCl_3) 0.88 (6H, br s, $2 \times \text{CH}_3$), 1.24 (36H, br s, $18 \times \text{CH}_2$), 3.25 (1H, m, CHOH), 4.93 (4H, m, $4 \times \text{CH}=\text{C}$); m/z (rel. int.) 406 [M^+] ($\text{C}_{28}\text{H}_{54}\text{O}$) (3.1), 388 (3.2), 349 (9.5), 335 (0.3), 321 (0.4), 307 (3.1, ion *a*), 292 (4.2), 278 (1.5), 283 (3.3, ion *c*), 264 (4.3, ion *l*), 240 (2.1, ion *e*), 235 (3.8, ion *j*), 220 (3.9), 213 (1.6, ion *g*), 206 (3.2), 192 (3.1, ion *k*), 138 (4.0), 124 (0.3, ion *d*), 98 (3.1, ion *b*), 84 (6.1), 70 (8.5), 57 (4.7), 43 (33.2), 29 (23.2), 18 (100) and 15 (20.5). Acetylation ($\text{Ac}_2\text{O}-\text{Py}$) of **1** afforded a monoacetyl derivative, m.p. 71–73°; ν_{max} (KBr) 1 725 cm^{-1} .

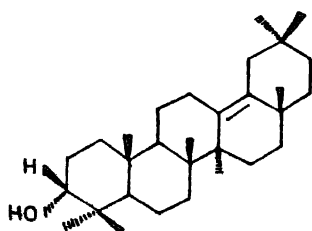
Triacot-15,19,23-trien-13-ol (2): The residue from petrol- CHCl_3 (9 : 1) eluate on crystallisation from $\text{CHCl}_3-\text{MeOH}$ (1 : 1) afforded white crystals (80 mg), m.p. 92–93°; ν_{max} (KBr) 3 580, 2 900,



(1)



(2)



(3)

2 820, 1 615, 1 355 and 785 cm^{-1} ; δ (60 MHz, CDCl_3) 0.84 (6H, s, $2 \times \text{CH}_3$), 1.26 (40H, br s, $20 \times \text{CH}_2$), 3.10 (1H, m, CHOH) and 4.50 (6H, m, $\text{CH}=\text{CH}$); m/z (rel. int.) 432 [M^+] ($\text{C}_{30}\text{H}_{56}\text{O}$) (4.0), 404 (3.1), 389 (2.8), 347 (0.1, ion a), 331 (10.6, ion n), 307 (0.1, ion c), 303 (10.3), 288 (9.9), 279 (0.6, ion e), 274 (3.1), 260 (5.5), 253 (0.5, ion g), 246 (2.9), 239 (0.5, ion i), 232 (4.6), 218 (3.4, ion l), 213 (0.6, ion k), 192 (3.1, ion j), 178 (2.3), 164 (8.2, ion h), 138 (1.2, ion f), 124 (3.2), 110 (8.2, ion d), 101 (1.1, ion m), 85 (1.3, ion b), 71 (1.7), 57 (3.1), 43 (3.9) and 29 (100). Acetylation ($\text{Ac}_2\text{O}-\text{Py}$) of 2 yielded a monoacetyl derivative, m.p. 78–79°; ν_{max} (KBr) 1 720 cm^{-1} .

Tritriacontane: Petrol- CHCl_3 (3:1) eluates gave the compound (120 mg), m.p. 69–71°; ν_{max} (KBr) 3 000, 2 910, 1 445, 1 355 and 1 135 cm^{-1} ; δ (60 MHz; CDCl_3) 0.83 (6H, s, $2 \times \text{CH}_3$) and 1.33 (62H, br s, $31 \times \text{CH}_2$); m/z (rel. int.) 464 [M^+] ($\text{C}_{33}\text{H}_{68}$) (0.3).

Tritracont-1-ol: Petrol- CHCl_3 (1:1) eluates afforded the compound (150 mg), m.p. 98–100°; ν_{max} (KBr) 3 590, 2 900, 1 440, 1 345 and 1 120 cm^{-1} ; δ (60 MHz; CDCl_3) 0.84 (3H, s, CH_3), 1.36 (62H, br s, $31 \times \text{CH}_2$), 3.20 (2H, br s, CH_2OH), m/z (rel. int.) 480 [M^+] ($\text{C}_{33}\text{H}_{68}\text{O}$) (1.3). Acetylation ($\text{Ac}_2\text{O}-\text{Py}$) of 4 afforded a monoacetyl derivative, m.p. 81–82°; ν_{max} (KBr) 1 725 cm^{-1} .

Gymnorhizol (3): Fractions 63–65, eluted with CHCl_3 gave the compound (65 mg), m.p. 208–10° (lit.³, m.p. 208–09°); ν_{max} (KBr) 3 560, 2 910, 1 595, 1 465 and 1 360 cm^{-1} ; δ (60 MHz; CDCl_3) 0.80 (6H, s, $2 \times \text{CH}_3$), 0.96 (3H, s, CH_3), 1.03 (6H, s,

$2 \times \text{CH}_3$), 1.10 (3H, s, CH_3), 1.16 (3H, s, CH_3) and 3.26 (1H, dd, J 3.5 and 4.5 Hz, 3- βH); m/z (rel. int.) 426 [M^+] ($\text{C}_{30}\text{H}_{50}\text{O}$) (72.7), 411 (7.8), 408 (5.2), 218 (58.9), 207 (38.1), 205 (49.3), 203 (53.5), 189 (58.4) and 55 (100). Acetylation ($\text{Ac}_2\text{O}-\text{Py}$) of 3 gave a monoacetyl derivative, m.p. 214–26°; ν_{max} (KBr) 1 725 cm^{-1} .

References

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2. "Annual Report", Regional Research Laboratory (C. S. I. R.), Jammu Tawi, 1987; K. K. BHUTANI, G. L. SHARMA and M. ALI, *Planta Med.*, 1987, **53**, 532.
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