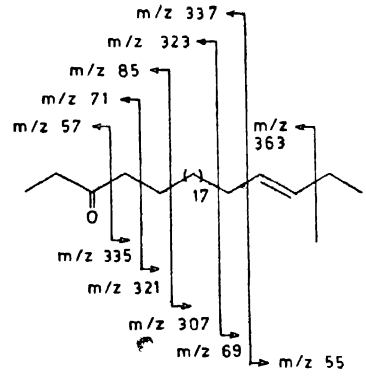
2. N. R. El-Rayyes and H. M. Ramdan, *J. Heterocycl. Chem.*, 1987, **24**, 589; R. M. Dodson and J. K. Sevler, *J. Org. Chem.*, 1951, **16**, 461; A. L. Weis, V. M. Shirina and V. P. Mamaev, *Izv. Sib Otd. Akad. Nauk SSSR, Ser Khim Nauk*, 1975, 144 (*Chem. Abstr.*, 1976, **84**, 105528).
3. N R. El-Rayyes and H M. Ramdan, *J Heterocycl Chem*, 1987. **24** 1141.
4. S S. Mehra, S Naik, R K Behera and A Nayak, *J. Indian Chem. Soc*, 1981, **58**, 274.
5. H M Randal, R G Fowler, N. Fuson and J. R Dangle, "Infrared Determination of Organic Structures", Van Nontrand, New York, 1949.
6. A. I. Vogel, "A Text book of Practical Organic Chemistry", 4th. ed, ELBS, London, 1978, p. 796
7. T. E. Achary, P. N. Dhal and A. Nayak, *J. Indian Chem. Soc.*, 1975, **52**, 1204



1

Heptacos-3-en-25-one—A New Unsaturated Ketone from *Ajuga bracteosa*†

R. S. BHAKUNI, Y. N. SHUKLA* and R. S. THAKUR

Central Institute of Medicinal and Aromatic Plants, Lucknow-226 016

Manuscript received 4 September 1989, accepted 6 December 1989

AJUGA bracteosa (Labiatae) is a perennial herb occurring in Western Himalayas from Kashmir to Nepal[1,2]. The leaves are diuretic, stimulant[1] and used as a substitute for Cinchona[3]. The plant is also reported to possess cardiostimulant action in animals[4] and anticancer activity in rats and mice[5]. Previous work on this plant includes isolation of saturated and unsaturated acids[6], insect antifeedant diterpenes[7,8] and insecticidal diterpenes[9]. In continuation of our work on the aerial parts of this plant[10], we now report a new unsaturated ketone.

The air-dried powdered aerial parts of *A. bracteosa* were extracted with *n*-hexane and the extract was concentrated under reduced pressure which in turn was subjected to vacuum liquid chromatography (VLC)[11] using silica gel as adsorbant. Compound **1** was eluted in hexane and was found to be homogenous on tlc, **1** m.p. 70–71°; ν_{max} 1 610, 820 (unsaturation), 1 710 (keto function), 1 380 (CH_3) and 715, 710 cm^{-1} (straight chain); *m/z* 392 corresponding to $C_{27}H_{52}O$. The base peak at *m/z* 57 and other abundant ion at *m/z* 335 formed by the α-fission of the CO group located it at C-25 whereas the other characteristic ions at *m/z* 363, 337 and 55 established the position of the double bond at C-3. These fragmentations are depicted on the structure. These data suggested the structure of **1** as heptacos-3-en-25-one which is in full accord with its ^1H nmr spectrum (80 MHz; $CDCl_3$) displaying resonances at δ 0.90 (6H, t, *J* 8Hz, two terminal CH_3), 2.35 (4H, t, *J* 8Hz, two CH_2 adjacent to CO function), 5.32 (2H, t, *J* 6Hz, olefinic function), 1.60 (4H, m, two CH_2 adjacent to double bond) and 1.25 (36H, brs, eighteen CH_2 of chain).

†CIMAP communication no. 16/89.

Acknowledgement

The authors are thankful to R.S.I.C. at C.D.R.I., Lucknow, for recording the mass spectrum.

References

1. "The Wealth of India–Raw Materials", C.S I.R., New Delhi, 1948, Vol. I, p. 42.
2. R. K. Gupta, "Flora Nainitalensis", Navyug Traders, New Delhi, 1968, p. 273.
3. R N. Chopra, S L. Nayar and I C. Chopra, "Glossary of Indian Medicinal Plants", C.S I R., New Delhi, 1956, p 10
4. D. G. Patel, O. D Gulati and S D. Gokhle, *Indian J. Physiol Pharmacol.*, 1962, **6**, 224
5. M. L Dhar, B N Dhawan, B N Mehrotra and C Ray, *Indian J Exp Biol*, 1968, **6**, 232.
6. D. S. Bhakuni and K. N. Kaul, *J. Sci. Ind Res, Sect B*, 1961, **20**, 185.
7. I Kubo, L. Yuh-Wei, V Balogh-Nair, K Nakanishi and A. Chapyo, *J Chem. Soc. Chem Commun*, 1976, 949
8. I. Kubo, M. Kido and Y. Fukuyama, *J Chem Soc Chem Commun.*, 1980, 897
9. I. Kubo, J A. Klocke, I. Miura and Y Fukuyama, *J Chem Soc. Chem. Commun*, 1982, 618
10. R S. Bhakuni, Y N Shukla and R S Thakur, *Indian J Pharm. Sci*, 1987, **49**, 225.
11. S. W Pelletier, H. P Chokshi and H K. Desai, *J Natural Prod*, 1986, **49**, 892

Rapid Tlc Separation of Aromatic Amines on Surfactant Impregnated Silica Gel-G Plates

RAJEEV JAIN* and ASHA BHATIA

Department of Chemistry, Jiwaji University, Gwalior-474 011

Manuscript received 22 May 1989, accepted 21 November 1989

AROMATIC amines are of considerable importance in industrial, toxicological and pharmaceutical applications[1]. Keeping this in view tlc separation and detection of various aromatic amines have been carried out by several workers on various adsorbents[2]. Dunean *et al.*[2] analysed aromatic amines by tlc on cellulose impregnated with bis-(2-ethylhexyl)hydrogen phosphate. Yasuda[3] carried