77%), m.p. 205° (Found : C, 61.39 ; H, 3.90 ; N, 8 82 $C_{16}H_{12}N_2O_3S$ requires ; C, 61.54 ; H, 3.85 ; N, 8.97%) ; ν_{max} (nujol) 1 662, 1 535, 1 447, 1 375, 1 300, 1 272, 1 235, 1 168, 1 028, 920, 865, 755 and 628 cm^{-1} ; δ ($CDCl_3$) 7.76 – 7.33 (6H, m, N – C_6H_5 + C_9–H), 7.10 (1H, s, C_4–H), 6.16 (2H, s, OCH_2O) and 2.53 (3H, s, SCH_3).

6-Ethylthio-7-phenyl-1,3-dioxolo[4,5-g]quinazolin-8(7H)-one (2e) : It was prepared by the above procedure by using ethyl bromide instead of methyl iodide. The product was crystallised from ethanol, yield (67%), m.p. 223° (Found : N, 8.48. $C_{17}H_{14}N_2O_3S$ requires : N, 8.59%) : δ ($CDCl_3$) 7.67 – 7.26 (6H, m, N – C_6H_5 + C_9–H), 7.00 (1H, s, C_4–H), 6.10 (2H, s, OCH_2O), 3.13 (2H, q, SCH_2CH_3) and 1.33 (3H, t, SCH_2CH_3).

1,3-Dioxolo[4,5-g]quinazolin-6,8(5H,7H)-dione (5) : A mixture of 1 (1.95 g, 0.01 mol) and urea (3.0 g, 0.05 mol) was heated in an oil-bath at 110 – 15° for 30 min. The temperature was then raised to 150 – 60°. There was evolution of ammonia which ceased after 7–8 h. It was then cooled and the product crystallised from ethanol, (1.69 g, 82%), m.p. >300° (Found : C, 52 62 ; H, 2.99 ; N, 13.45. $C_9H_6N_2O_4$ requires : C, 52.42 ; H, 2 91 ; N, 13.59%) ; ν_{max} (nujol) 3 350, 3 190 (N – H's), 1 670 (CO – N) and 1 642 (N – CO – N) cm^{-1}.

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Ursolic Acid from *Nepeta leucophylla* Benth.

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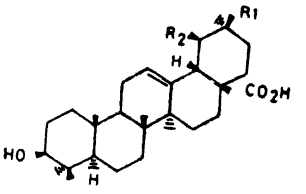
and

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MANY plants, including members of the genus *Nepeta*, have been reported to yield ursolic acid **1a** often in combination with its isomer oleanoic acid **1b**[1-3]. We describe here the isolation and identification of 98% pure **1a** as its monohydrate from *N. leucophylla* Benth.



1a ; R_1 = H ; R_2 = CH_3
1b ; R_1 = CH_3 ; R_2 = H

The leaves of *N. leucophylla* were collected from Nainital in the month of May. Identification was confirmed by Y. P. S. Pangtey, Kumaun University (Herbarium no. 708) and P. P. Muyal, F.R.I., Dehradun (Accession no. 153826). The dried and powdered leaves (785 g) were extracted with diethyl ether to yield a white microcrystalline product (1.7 g, 0.2%), m.p. 262–63° with gas evolution, m.p. 287–89° after drying at 110° in vacuum, $[\alpha]_D^{25}$ 64.2° (*c* 0.8, 1 *N* alc. KOH). Tlc (silica gel G ; 5% CH_3OH in $CHCl_3$) indicated the presence of no more than one compound. The EIHR mass spectrum of the product indicated that it is **1a**, **1b** or a combination of the two[4], and its elemental analysis and melting behavior suggested that it is **1a**.H_2O[5]. Its ir spectrum was in good agreement with that reported[5] for **1a** and its 360 MHz ^1H nmr spectrum was consistent with the reported 60MHz spectra of related urs-12-enes[6,7]. The 360MHz spectrum allows us to give more accurate values of δ 0.946 and 0.860, *J* 6.4Hz, for the doublets due to methyls at C_{29} and C_{30}. Further, lack of absorption of δ 1.15 due to the C_{27} methyl of olean-12-enes related to **1b**[6], allows us to place an upper limit of 2% on the amount of **1b** in the *N. leucophylla* product. Resonance frequencies in the ^{13}C nmr spectrum, with the exception of that due to the nondiagnostic carboxyl carbon, differed by no more than 0.3 ppm from resonances reported for methyl ursolate[8].

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Amino Acids from *Leucas lanata*

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THE genus *Leucas*[1] belonging to *Labiatae* family comprises 100 species found throughout the world. The species, *Leucas lanata* Benth.[1,2] is found in Tripura along with *L. aspera* Spreng. It is a perennial herb with much branches from a stout rootstock having white flowers in axillary dense whorls, which have calyx straight mouths and setaceous bracts. Tender shoots are used as vegetables and leaves, and used medicinally[1]. To find out the diet value of the plant with respect to amino acid content, we investigated chemically for the first time the aerial parts of the plant and isolated fourteen amino acids among which six are essential. In this communication, we report the isolation, characterisation and relative occurrence of these amino acids.

The aerial parts of the plant, *L. lanata* were collected from Khayerpur area of Agartala in September, 1985. The air-dried milled aerial parts (1 kg) were extracted with petrol (b.p. 60–80°) and 90% ethanol successively in a Soxhlet for 48 h each. The alcoholic extract was concentrated and decolourised by refluxing with a little charcoal. The greenish filtrate was evaporated under reduced pressure to a gummy residue (30.2 g). A part of the residue (1.5 g) was chromatographed[3,4] through Amberlite IR 120(H). Working up the column for neutral and basic amino acids as described[5] led to the identification of lysine, threonine and histidine by co-pc with authentic samples.

Another portion of the crude residue (2.0 g) was chromatographed through Amberlite 1RA 400(OH) and elution with 2 *N* acetic acid for basic and neutral amino acids led to the characterisation of glycine, serine, aspartic acid, glutamic acid, hydroxy proline, proline, alanine, tyrosine, tryptophan, methionine and phenyl alanine by co-pc with authentic samples.

The relative occurrences of amino acids in μg per g of air-dried aerial parts isolated through their ninhydrin complexes and estimated colorimetrically[6] were found to be histidine, 6 80 ; lysine, 4.80 ; threonine, 2.40 ; aspartic acid, 2.28 ; proline, 2.18 ; alanine, 2.01 ; phenylalanine, 1.98 ; glycine, 1.60 ; serine, 1.40 ; tyrosine, 1.05 ; glutamic acid, 1.01 ; hydroxyproline, 0.93 ; tryptophan, 0.75 and methionine, 0.30. The amounts of glycine and serine may be inaccurate as their bands were very close in preparative pc. Among these, histidine, lysine, threonine, phenyl alanine, tryptophan and methionine are essential amino acids for human system.

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Amino Acids from *Spilanthes paniculata*

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THE genus *Spilanthes*[1] belonging to *Compositae* family comprises 60 species found in tropical America and exotic in other countries. The species, *Spilanthes paniculata* Wall. ex DC.[1,2] is found in the jhum land and waste places of Tripura. It is an annual herb of 2.5–5 cm long with many branches and yellow paleae embracing flowers. The juice of this plant is used by the tribesmen in the relief of gum pain. We investigated chemically for the first time the aerial parts of the plant and isolated twelve amino acids among which six are essen-