SYNTHESIS OF ELVIROL METHYL ETHER

Because of the biogenetic interest of the phenolic sesquiterpenoid elvirol (1a), which we suggest, may originate from sesquicarene (II) by oxidative ring fission (bond a) followed by aromatisation, several syntheses of the phenol and its methyl ether have been reported. In continuation of our work on phenolic sesquiterpenoids, a two step synthesis of elvirol methyl ether (Ib) is described in this communication.

2-Bromo-4-methylanisole (IIIa) (NMR (60 MHz CCt4 + TMS): δ 2.16 (3H, s, Ar-Me), 3.5 (3H, s, Ar-OMe) and 6.53-7.33 (3H, m, Ar-H)) obtained either from p-cresol methyl ether by bromination in glacial acetic acid or from 2-bromo-4-methyl phenol by methylation with dimethyl sulphate in alkali, was reacted with lithium dust in ether under nitrogen to furnish 2-methoxy-5-methylphenyl lithium (IIIb). Treatment of 6-methylhept-5-en-2-one with the aryllithium (IIIb) in ether followed by work-up with aqueous hydrochloric acid (1:1), and chromatographic purification of the product (silica gel column-hexane gave the aryllithiadiene (IV) in 90% yield [IR νmax (neat): 1620 and 1605 cm⁻¹ (aromatic and C=O); NMR (CCL4): δ 1.70 (3H, s, vinyl-Me), 1.75 (3H, bs, vinyl-Me), 2.0 (bs, Ar-C-Me), 2.3 (3H, s, Ar-Me), 2.35-3.00 (m, >CH2), 3.75 (3H, s, Ar-OMe), 4.95-5.4 (m, vinyl-H) and 6.65-7.17 (3H, m, Ar-H)]. Identical diene (IV) (IR, NMR and TLC) was obtained by treatment of methylheptenone with 2-methoxy-5-methylphenylmagnesium bromide (IIIc).

![Diagram](OR, OMe, R, E/Z)

The regioselective reduction of the styreryl double bond in the diene (IV) by lithium in liquid ammonia (dried over sodium), followed by decomposition with ammonium chloride and chromatographic purification of the product (silica gel column-hexane) gave elvirol methyl ether (Ib) in 87% yield [IR (neat): 1605 and 1595 cm⁻¹ (aromatic and C=O); NMR (CCL4): δ 1.13 (3H, d, J = 7Hz, Ar-CHMe), 1.46 (3H, s, vinyl-Me), 1.60 (3H, s, vinyl-Me), 1.3-2.0 (4H, m, CH2), 2.2 (3H, s, Ar-Me), 2.8-3.26 (1H, m, Ar-CHMe), 2.7 (3H, s, Ar-OMe), 5.05 (1H, m, vinyl-H) and 6.46-6.93 (3H, m, Ar-H)]. The spectral characteristics of the specimen agree with those reported for elvirol methyl ether (Ib). After completion of this work our attention was drawn to an account of...
the synthesis of elviroi by the Australian workers on similar lines.

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CHROMOSOME NUMBER AND DNA, RNA VALUES IN SOME INDIAN BATS (CHIROPTERA)

Our knowledge about the chromosomes of bats has been very meagre till to-date despite their wide distribution. A survey of the literature reveals that cyto genetic reports of only a few Indian species of bats are available. The present studies were therefore, undertaken with a view to exploring the chromosomal data on as many representatives of bats as possible. The present findings, which are a part of a larger programme of research work on Indian bats, have been made on nine species. Of these, the chromosomal number of four species, viz., Rhinopoma microphyllum kinneari, Taphozous nudivertis kachenius, Taphozous perforatus perforatus and Hipposideros fulvus pallissidus is being reported for the first time, whereas that for the remaining five species, viz., Cynopterus sphinx sphinx, Rhinopoma hardwickei hardwickei-2, Scotophilus heathi heathi, Megaderma lyra lyra and Rousettus leschenaultii had been known beforehand.

Also, the studies include the estimation of DNA and RNA in mg/gm of known weight of tissues like liver and spleen in order to find out the possible relationship between these biochemical components of the nucleus and the chromosome number in the various species of bats under report.

For chromosomal studies, 0-5% of colchicine per kg body weight was injected intraperitoneally and 24 hours later the specimens were sacrificed and the marrow from the long bones was collected. After hypotonic treatment in sodium citrate (0.9%) for half an hour and fixation in acetic-alcohol (1:3) overnight, the usual air-drying technique was followed.

The quantitative estimation of DNA and RNA contents from the tissues was confined to a known weight (100 mg) by employing perchloric acid method. The readings for DNA and RNA were taken from at least five different samples of the same species for every tissue on Bausch and Lomb Spectronic-20. The mean values in mg/gm were thus calculated from the standard graphs prepared by using the standard DNA's and RNA's of calf thymus gland and yeast respectively. The standard deviations and standard errors of the 'mean' were also calculated which refer to variation among the averages obtained from different individuals of the same species.

The studies of chromosomal slides reveal the diploid number of chromosomes varying from 34-54 in these various species (Table I). It is 34 in two, 42 in two, 36 in four and 54 in one species. The studies point out that the 2N number of chromosomes varies not only in the species belonging to different genera but also in the species of the same genus. Thus the species are rather indistinguishable on the basis of chromosome number alone.

The mean values for DNA, RNA in mg/gm. of the known weight of the various tissues obtained through repeated experimentation are also mentioned in Table I and Figs. 1 and 2.

Considering the chromosome number and DNA and RNA values on a collective basis, one finds that the species with the same diploid number of chromosomes possess a variable amount of DNA and RNA in their tissues. This has also been reported in the various species of the genus Bubo and in Amphibia in general where the total nuclear DNA amount is the most variable, cyogenetic characteristic while the chromosome numbers are relatively constant. Similarly, in the two species, viz., Hipposideros fulvus pallidusus (Micchiochromera) and Cynopterus sphinx sphinx (Megachiromerida) both with a diploid number of 34 chromosomes, DNA values are higher in the former than B. fulvus pallidusus (Megachiromerida) both with a diploid number of 34 chromosomes, DNA values are higher in the former than...