to 44 × 40 μm. Stipe cuticle consisting of hyaline, thin-walled, septate, branched, interwoven hyphae, 1.5–4.5(–6) μm diam. Stipe context heteromerous.

Chemical tests (Stipe surface): with 2% aq. phenol—purple; with 10% Ferrous sulphate—salmon; with formalin—negative.

Habit and Habitat: Solitary—scattered, associated with *Cedrus deodara*, *Picea smithiana*, *Pinus wallichiana*, *Quercus incana* and *Rhododendron arboreum*.

Specimens examined: Acc. Nos. Shimla; HPUB 1244, 1284, 1309, 1342, 1357, 1421, 1525.

Remarks: The present species is in conformity with *Russula lutea* (Huds. ex Fr.) Fr. It is reported to be edible by Kibby[3] and Miller[4].

Thanks are due to DST and UGC, New Delhi for financial assistance.

8 April 1988

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ABSENCE OF GLYOXALASE-I POLYMORPHISM IN NAIKPODS OF ANDHRA PRADESH, INDIA

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Erythrocyte glyoxalase I (GLO: E.C.4.4.1.5) in humans is polymorphic due to the occurrence of three common phenotypes viz. 1–1, 2–1 and 2–2, determined by two autosomal codominant alleles-GLO^1 and GLO^2, and is known to be located on chromosome 6 between major histocompatibility (HLA) region and phosphoglucomutase-locus-3[1], and it is widely used as a genetic marker in the study of human variation. In recent years several tribal, and caste groups of the Indian subcontinent have been studied for GLO polymorphism and these populations were found to be polymorphic for the two common genes GLO^1 and GLO^2 in varying frequencies[1–10].

In this paper we report the absence of GLO polymorphism, for the first time in an endogamous, proto-Australoid, settled agrarian aboriginal Naikpod tribal group inhibiting the north-western parts of Andhra Pradesh. Naikpods were previously investigated for various genetic markers[11–13] but no data are available for GLO in this population.

A total of 353 blood samples were collected from unrelated Naikpod individuals living in the villages of Armur taluk of Nizamabad district, Chinnoor and Luxettipet taluks of Adilabad district of Andhra Pradesh. Hemolysates were prepared and subjected to starch gel electrophoresis for the identification of GLO phenotypes[14]. A known GLO 2–1 phenotype sample was included as reference in each electrophoretic run.

All the 353 samples are found to be homozygous for the GLO^2 gene. Absence of GLO^1 gene in Naikpods is unexpected considering the polymorphic nature of GLO in all the population groups studied earlier[1–10]. The frequency of GLO^1 varies from 14.7% in Brahmins of Delhi[2] to about 37% in Narikoravas (a nomadic tribe of South India)[5]. In other Indian populations its frequency was reported[9] between 15 and 33%.

Absence of GLO^1 gene was reported earlier in the aboriginal populations of Australia and Papua New Guinea[2]. In general, the frequencies of GLO^1 gene among Indian populations are lower than in Caucasian populations where its frequency is reported[1,9] to be above 40%. Although Indian populations are genetically more heterogeneous in view of their endogamous marriage pattern due to social, cultural, historical, geographical and religious barriers, the absence of GLO^1 gene in Naikpods is a significant finding and at the moment we are not in a position to offer any explanation.

Financial assistance from DST, New Delhi, is gratefully acknowledged.

2 February 1988; Revised 7 May 1988

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INFLUENCE OF SEX HORMONES ON SERUM TRANSAMINASES DURING EXPERIMENTAL LIVER INJURY IN RATS

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SEVERAL deviations from the normal metabolic function of the liver occur in a wide array of toxic abuses. They result in marked swelling as well as eventual rupture of subcellular organelles. These events lead to activation, inactivation or leakage of enzymes contained within the organelles. Therefore, efflux of enzymes is a sensitive index of hepatotoxicity. Glutamic pyruvic transaminase (GPT, EC 2.6.1.2) and glutamic oxaloacetic transaminase (GOT, EC 2.6.1.1) are of significant diagnostic value. They have been extensively studied during acute or chronic intoxication of the liver[1-4]. Similarly, they may serve as reliable markers of liver function improved by liver protecting agents. A simultaneous study of histological lesions almost confirms the therapeutic value of the drug/agent. In a recent study, sex hormones have been found to exert a protective influence on histological lesions induced by halogenalkanes[5]. The present study was undertaken envisaging a similar influence on liver function also. This report describes the effects of testosterone and progesterone on serum transaminases (GOT, GPT) in rats treated with the hepatotoxins carbon tetrachloride (CCl_4), hexachlorobenzene (HCB) and trichloroethylene (TCE).

Ninety-day-old 45 male and 45 female Wistar rats (*Rattus rattus* albino) weighing 100 ± 10 g were selected from the laboratory stock. They were kept on a 12 h light/dark cycle and fed on laboratory chow obtained from M/s Lipton India Pvt. Ltd., Bangalore, and tap water *ad libitum*. Each rat was housed separately in woven wire cages under standard laboratory conditions (room temp. = 25 ± 3°C, humidity $60 \pm 10\%$) and administered the respective halogenalkane/sex hormone, as in table 1.

After the scheduled treatments, the rats were anaesthetized with diethyl ether and blood was aspirated from the caudal vein. Transminases were estimated in the serum by the method of Reitman and Frankel[6]. Student's *t* test was applied for statistical inferences[7]. Data were further analysed for intergroup comparisons by analysis of variance.

Release of GOT into the serum was much higher in CCl_4-treated rats than in control rats. Hexachlorobenzene (HCB) and TCE treatments also resulted in increased serum GOT. Although testosterone inhibited enzyme efflux in CCl_4- and HCB-treated rats, the hormone did not significantly inhibit enzyme release caused by TCE. Progesterone also failed to inhibit enzyme efflux in TCE- and HCB-treated rats.

Results for GPT show that hormone failed to inhibit enzyme efflux in almost all the treatments. However, testosterone was much more effective than progesterone in all the treatments. Non-significant results were, however, obtained against HCB (table 2).

Sex-related differences in the metabolism of xenobiotics are widely known now. Moreover, it has been reported that liver of males are more sensitive to carbon tetrachloride[8] whereas trichloroethylene induces greater fatty infiltration in liver of females[9]. Quantitative profiles established in the liver of male and female rats have also shown changes in the activities of enzymes[10]. CCl_4 and TCE both are known to induce serum transaminases[11,12]. These observations seem to point to the differential action of sex hormones. The present data for GOT show that the hormones may not interfere at all with the toxic effects of trichloroethylene, whereas they are effective against carbon tetrachloride and hexachlorobenzene. The data for GPT again cast doubt on their efficacy against hexachlorobenzene, parti-