Table 1 *Retention time of different plant phenolic acids*

Compound	ODS (min)	C8 (min)
Gallic acid	2.7	3.1
Methyl gallate	3.4	3.7
3,4 di-OH cinnamic acid	3.8	4.0
Ethyl gallate	4.4	4.5
4-OH cinnamic acid	5.1	5.1
Benzoic acid	7.6	6.4
Salicylic acid	9.2	7.1
3,4, di-OH benzoic acid	3.1	3.4
4-OH-3-OMe benzoic acid	3.9	4.2
Ferulic acid	5.1	5.2
3,4 di-OMe benzoic acid	5.4	5.6
4-OMe benzoic acid	8.3	7.1
Iso ferulic acid	11.4	7.5
Cinnamic acid	12.9	9.2

Table 2 *Retention time of different plant phenols*

Compound	ODS (min)	C8 (min)
Quinol	3.0	3.3
Resorcinol	3.3	3.5
Catechol	3.9	3.7
Orcinol	4.0	3.8
Vanillin	5.0	4.5
Phenol	5.8	4.6
Cresol	9.4	5.8

components could be easily separated and identified from inseparable mixture in PC and TLC (the components listed in tables 1 and 2, were separated from each other in the group.) A PC homogeneous phenolic compound showing a marked anti-cancer activity when subjected to HPLC revealed it to be a mixture of three components (protocatechuic, ferulic and caffeic acids in the ratio of approximately 3:2:2). Zorbax ODS was found superior to Zorbax C8 in terms of resolution. HPLC analysis of phenolic components of non-resistant and resistant strains of *S. vulgare* is now in progress.

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INTERACTION OF TRIS (2-ETHYL HEXYL) TRIMELLITATE (HATCOL-200) COTTON SEED OIL AND NORMAL SALINE V ITH PENTOBARBITAL SODIUM—A PROSPECTIVE APPROACH

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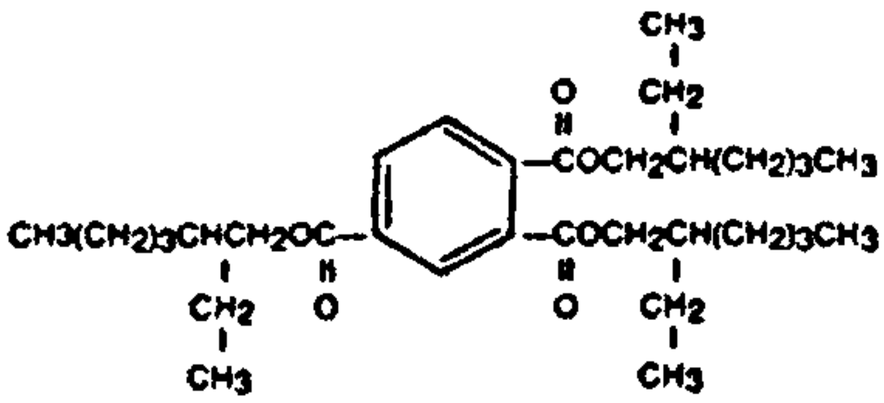
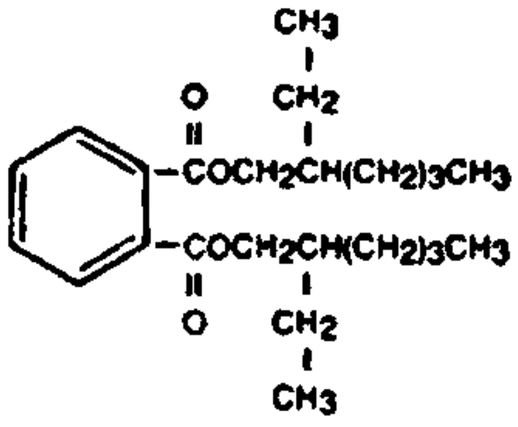
THE application of tris (2-ethyl hexyl) trimellitate (HATCOL-200) as a primary plasticizer in polyvinyl chloride used for medical applications (such as plastic tubes, blood bags, dialysis tubing, catheters and similar biomedical devices) has long been in practice. Blood serum extraction studies of film made with HATCOL-200 showed extractables to be one hundredth of that of a film made with di (2-ethyl hexyl) phthalate (DEHP), the conventionally used plasticizer[1]. Since the new plasticizer is considered as an alternative for and structurally analogous to DEHP (figure 1), its effect on biological systems is explored here by studying its interaction with other xenobiotics, such as pentobarbital. Sleeping time (narcosis) index of pentobarbital administered was used to investigate its interaction with HATCOL-200, cotton seed oil and normal saline with a view of obtaining meaningful data towards their mechanism of action.

Adult male albino mice (17–23 g) from the stock at this Institute and maintained on pellet diet and water *ad libitum* under standard husbandary conditions were used. These animals were divided into three groups of six each. They were treated with HATCOL-200, cotton seed oil and normal saline (0.9 g w/v in distilled H_2O) [5 ml/kg] for five days intraperitoneally. Doses were selected on the basis of our pilot studies.



TRIS (2-ETHYLHEXYL) TRIMELLITATE
(HATCOL 200)



DI (2-ETHYLHEXYL) PHTHALATE
(DEHP)

Figure 1. Chemical structure of DEHP and HATCOL-200.

Twenty four hours after the last (5th day) injection, all these groups received 50 mg/kg of pentobarbital and their sleeping time was noted. The interval between the loss and regaining of righting reflex was recorded as the sleeping time; these were measured by laying the animals on their backs until they returned to their feet.

Statistical significance of the result was evaluated by Students' *t* test as described by Fisher[2].

A significant ($P < 0.01$) reduction of pentobarbital-induced sleeping was observed (table 1) as a result of HATCOL-200 pretreatment for five days. This may be attributed to the quick elimination of pentobarbital in the presence of this new plasticizer. The present results do not agree with those of Lawrence *et al*[3] who demonstrated a dose-related increase in the pentobarbital sleeping time in albino mice treated under identical conditions with DEHP. Further an attempt was made to verify the enlargement of lipophilic pool by intraperitoneal injection of fixed vegetable oil (such as olive oil, cotton seed oil and others) which produced a non-specific effect (sleeping time change) after pentobarbital injection as claimed by Swinyard *et al*[4]. Our

Table 1 *Effects of intraperitoneal administration of tris (2-ethyl hexyl) trimellitate HATCOL-200), cotton seed oil and normal saline on pentobarbital induced sleeping time*

Treatment	Sleeping time (min)	Significance
Control normal saline 5 ml/kg intraperitoneally IP	39.5 ± 8.27	—
Tris (2-ethyl hexyl) trimellitate 5 ml/kg IP	13.3 ± 5.72	$P < 0.01$
Cotton seed oil 5 ml/kg IP	39.1 ± 6.36	—

Six mice were used in all treatments; All values are mean ± SE from six animals; Probability evaluated by Students' *t* test.

study using cotton seed oil did not support this hypothesis. The quick biotransformation/elimination kinetic of injected pentobarbital by other xenobiotics such as HATCOL-200 in *in vivo* condition may be due to the increased release of drug metabolizing enzymes or some other non-enzymatic process. The new plasticizer might act as a facilitating factor of hepatic microsomal enzymes that catalyse the oxidation of pentobarbital.

This note forms part of the Ph.D. thesis work of KR.

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A NOTE ON BISMUTH INCIDENCE IN NARDA HILL, NIM-KA-THANA TAHSIL, DISTRICT SIKAR, RAJASTHAN

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A small outcrop of lumpy bismuth ore was located in the pegmatites at Narda (27°45'N:75°56'E) in northeastern Rajasthan (figure 1). Initial optical