Absence of Carcinogenicity of a Cod Liver Oil Concentrate*

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The possibility that cod liver oil concentrates might have carcinogenic activity and thus endanger their users was given consideration when a nonsaponifiable lipid extract of human liver injected into mice produced sarcomas (14). The preparation of this carcinogenic human liver extract involved saponification followed by extraction with a lipid solvent, a procedure not unlike that used in the preparation of cod liver oil concentrates [U. S. Patent 1,690,091] (9), some yellow bone marrow extracts [U. S. Patent 2,091,730] (8), some ovarian extracts, and some other biologicals used in medication. Since the possibility that the carcinogenic activity of the human liver extracts might be due to a chemical artifact was not at first excluded (although Schabad (12) prepared a human liver extract which had carcinogenic activity by a method which did not utilize saponification) it was not unreasonable to wonder whether similar artifacts might not be formed in the preparation of cod liver oil concentrates.

Accordingly a nonsaponifiable lipid extract was prepared from cod liver oil by procedures identical with those previously used in the preparation of a human liver extract (16). This was then tested for carcinogenic activity. While this test was in progress other reports appeared showing that the nonsaponifiable lipid fraction of human liver was carcinogenic (4, 6, 7, 11, 15). These results were additional justification for the experiments reported here.

It is also important to examine for carcinogenic activity certain things present in the environment of Americans and North Europeans, and not present among some other peoples, which might explain differences in the incidence of cancer of various portions of the alimentary tract, particularly the stomach (1, 13). In contrast with the low incidence of such cancers in the Bantu of South Africa (2) is their common occurrence in the Afro-American (5, 10). The explanation might lie in differences in the environment, the genetic constitution presumably not having been totally changed.

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tumors in this colony of mice. The extract has been given a fair test for carcinogenicity as indicated by residues of the original extract at autopsy in many of the animals dying after 1 year.

SUMMARY
A cod liver oil concentrate prepared by saponification and extraction with ethylene dichloride has not been carcinogenic when injected into mice.

REFERENCES
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