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Unproven Methods of Cancer Treatment

The following statement concerning Krebiozen, a preparation proposed for the treatment of cancer by Dr. Stevan Durovic and the Krebiozen Research Foundation, was recently distributed to the 59 Divisions of the American Cancer Society for their information.

Krebiozen

Krebiozen is reported to have been originally produced by Stevan Durovic, M.D., a Yugoslavian physician, in Argentina, and brought to the United States in 1949. According to Dr. Durovic, the original 2 grams of powder, from which he said 200,000 doses were prepared, was obtained as an extract of the blood of 2,000 Argentinian horses which had previously been injected with a sterile extract of *Actinomyces bovis*, a microorganism which causes a disease called "lumpy jaw" in cattle. In October 1960, Dr. Durovic was quoted in newspapers as stating that, during that year, he had made two batches of Krebiozen in Illinois, each yielding about 250 milligrams (1/120 of an ounce), approximately 50,000 doses of the drug. He stated that analysis of the material showed it contained lipopolysaccharides, consisting of a mixture of six sugars, since reported to be galacturonic acid, galactose, glucose, glucosamine, arabinose and xylose, combined with a fat molecule. Dr. Durovic said that this was the same substance found by chemical analysis in his original batch of Krebiozen.

Since mid-1959, a drug made in the same way as Krebiozen, but called "Lipo-polysaccharide C," has been prepared and studied by Dr. Andrew C. Ivy, professor emeritus of the University of Illinois, who has been interested in Krebiozen since 1949. According to Dr. Ivy, "Lipopolysaccharide C," which he stated is the scientific name of Krebiozen, consists of a fatty

substance conjoined with a substance containing several sugars, six of which have been identified. Different batches of the "lipopolysaccharide" are reported to have different strengths. Efforts are being made to produce this substance synthetically.

Three organizations have been primarily concerned with the production, use, and distribution or sale of Krebiozen. At present, Krebiozen is being distributed by Promak Laboratories, Inc., of Chicago. This corporation was originally organized as the Instituto Biologica Duga of Buenos Aires, and later was known as the Duga Laboratories, Inc., of Buenos Aires and Chicago. It is owned by Dr. Stevan Durovic and his brother, Marko Durovic, a lawyer.

The Krebiozen Research Foundation, Chicago, Illinois, is registered in the State of Illinois as a nonprofit corporation. It furnishes Krebiozen to physicians who request it for investigational use. According to the Foundation, patients treated with Krebiozen are requested, through the physician who obtains it, to make a contribution to the Promak Laboratories which supplies the drug.

The Ivy Cancer Research Foundation, Chicago, Illinois, was incorporated as a not-for-profit corporation on March 4, 1959. In a fund raising brochure, distributed in 1960, it is stated that: "The Foundation is dedicated to furthering research conducted by Dr. Andrew C. Ivy and others whose proj-

ects may be approved by the Foundation, on the use of lipopolysaccharide C."

Several other organizations and individuals have been active in disseminating information about, and seeking to arouse interest in, Krebiozen as a treatment for cancer.

Preliminary results with Krebiozen as a treatment for cancer were first announced, both to the medical profession and to the public, at a meeting called for this purpose at the Drake Hotel in Chicago on March 26, 1951. Following this announcement, several medical centers were given small amounts of the preparation for experimental use. During the intervening 10 years, no scientifically acceptable report substantiating the usefulness of the drug has been issued.

In September 1961, the Krebiozen Research Foundation and Dr. Andrew C. Ivy gave representatives of the National Cancer Institute a small amount

of Krebiozen, reported to be 10 milligrams (1/3,000 of an ounce), together with an analysis of clinical data on 4,200 cancer patients. The National Cancer Institute studied these data. In March 1962, Dr. Kenneth M. Endicott, Director of NCI, reported that he had notified Drs. Durovic and Ivy that more information must be provided before the decision could be made whether and how to test the preparation in human beings. The American Cancer Society hopes that acceptable scientific evidence concerning the value or lack of value of this preparation may be obtained without further delay for the information of physicians who have the responsibility for the treatment of patients with cancer.

There is no evidence available to the American Cancer Society, up to the present, that demonstrates that Krebiozen is of proven merit in the treatment of human cancer.



The American Cancer Society announces the publication of a booklet on the "Management of Gynecologic Cancer" by John C. Ullery, M.D. and Thomas Pomeroy, M.D. The booklet is a reprint of the article in the July-August 1962 issue of CA.

Copies will be available from the 59 Divisions of the American Cancer Society.