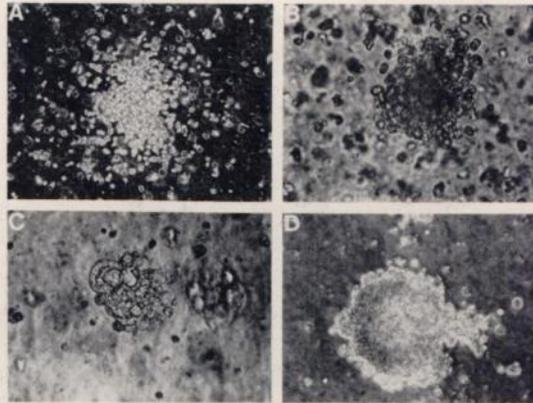


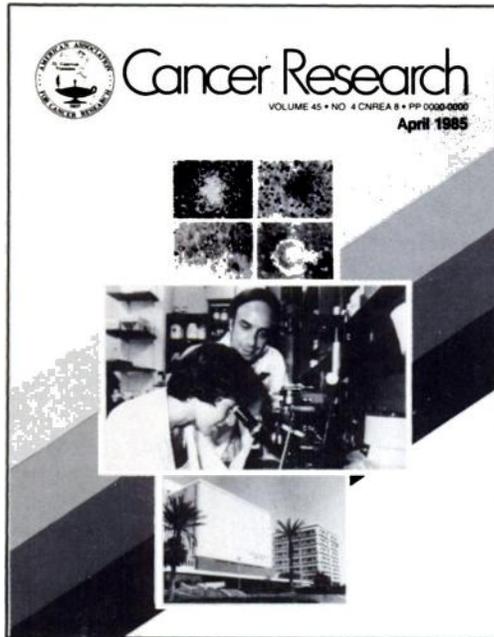
Cancer Research

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COVER LEGEND



This month *Cancer Research* notes the development of simple semisolid techniques for direct *in vivo* cultivation and testing of human tumors in clonogenic assay, which may reflect the *in vivo* behavior of tumor stem cells. Concerted efforts to develop this field of cancer research began at the University of Arizona Cancer Center in 1975, when Dr. Sydney E. Salmon and Dr. Anne W. Hamburger initiated attempts to clone human multiple myeloma in soft agar. In 1977, they first reported that the method they developed had applicability to fresh biopsy samples from a wide variety of human neoplasms [*Science* (Wash. DC), 197: 461, 1977]. Only a small proportion of originally used human cells acted as progenitors or "stem cells" for the colonies. Illustrated are four such colonies, at 13 to 21 days of culture: (A) lymphoma; (B) myeloma; (C) ovarian carcinoma; and (D) neuroblastoma from the *Science* article.

The next major development demonstrated that the "stem cell assay" could be used to test anticancer drugs in a fashion analogous to antibiotic testing of bacteria and that *in vitro* sensitivity or resistance was predictive of the clinical result of cancer treatment with the specific agents tested (*N. Engl. J. Med.*, 298: 1321, 1978). A promising laboratory bioassay that predicts clinical response thus became available. Subsequently, the technique has been applied to various studies of basic cancer biology, pathology, cellular interaction, and cytogenetics, as well as for cancer diagnosis and testing of Phase II agents and preclinical drug screening of new compounds. This method holds promise for furthering cancer research and providing a more specific approach to cancer therapy. The efforts of Salmon and Hamburger were facilitated and extended by a closely knit team of laboratory and clinical investigators, many of whom contributed chapters for a book, edited by Salmon, entitled "Cloning of Human Tumor Stem Cells" (New York: Alan Liss, Inc., 1980, 367 pp.).

Sydney E. Salmon was born in 1936 and received his doctorate from Washington University School of Medicine in 1962. He has been with the University of Arizona since 1972 and is a Professor of Internal Medicine. In 1976, he was appointed the first Director of the University's Cancer Center.

Anne W. Hamburger was born in 1947 and received her doctorate from New York University in 1973. She was with the University of Arizona from 1975 to 1978, first as a postdoctoral fellow and subsequently as an Assistant Professor. Since 1978, she has been a Research Associate with the American Type Culture Collection in Rockville, Maryland.

The cover photo of Salmon and Hamburger (taken by Michael Stoklos) first appeared in *Time* shortly after the appearance of the *New England Journal of Medicine* article cited above. Also depicted on the cover is the Arizona Health Sciences Center.

We are indebted to Dr. Salmon for the information and illustrations.

M.B.S.