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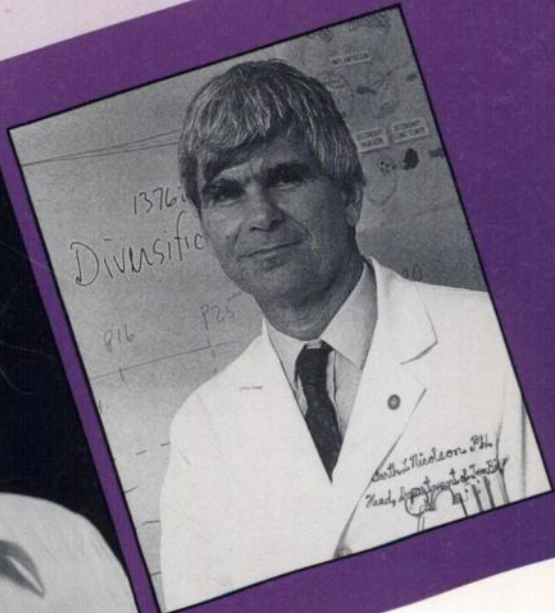
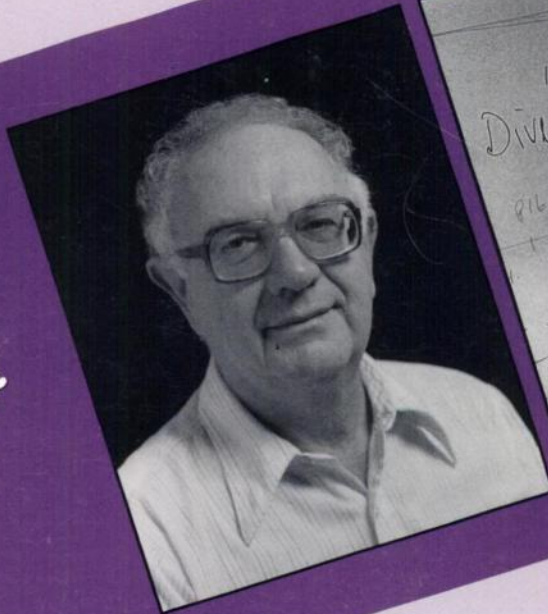
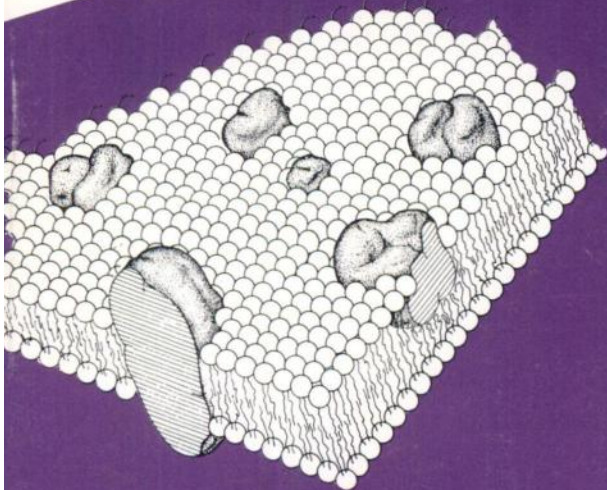


Cancer Research

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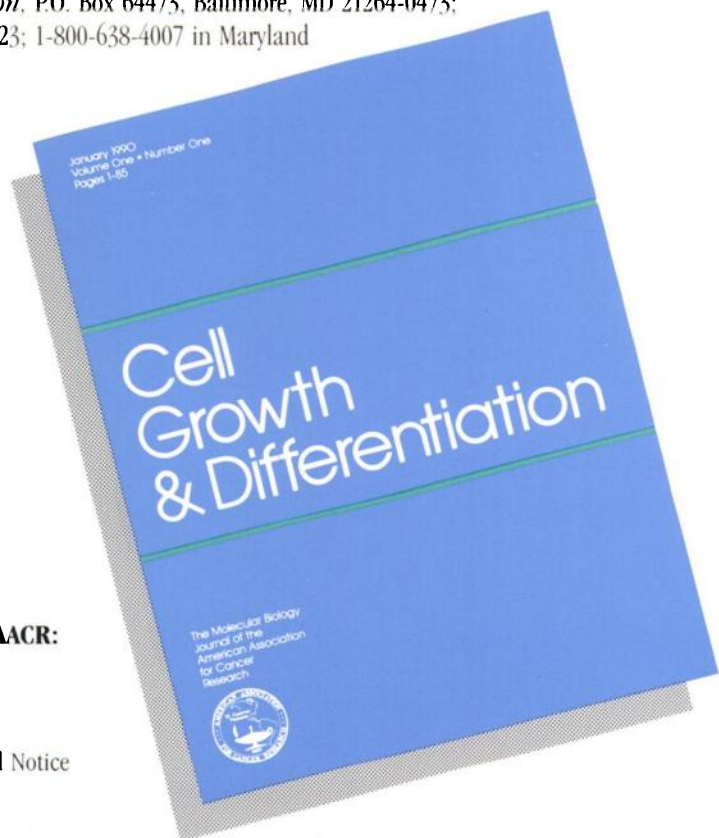
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STEROID HORMONE RECEPTORS

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B. O'Malley, Houston, TX
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SIGNALS FOR TRANSCRIPTIONAL CONTROL

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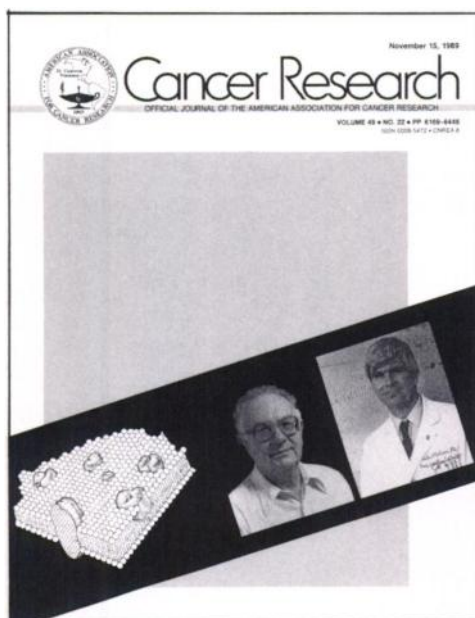
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INFORMATION AND APPLICATION FORMS

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COVER LEGEND



The cell membrane is the first cellular structure encountered by exogenous agents used for tumor cell therapy. As such, it is an obvious target for new therapeutic approaches using drugs, biological agents, and host effector systems. The concept of the cell membrane as a dynamic structure capable of rapid and reversible structural, compositional, and distributional changes is of relatively recent origin. In the late 1960s and early 1970s, information indicating that cell membranes were dynamic structures began to accumulate. A new proposal for membrane structure, the fluid mosaic membrane model, incorporated this concept and was also consistent with the expanding experimental evidence that membrane proteins were bound and intercalated to varying degrees into a predominantly fluid lipid bilayer. This proposal for a two-dimensional, asymmetrically arranged mosaic of proteins, glycoproteins, and lipids that allowed dy-

namic changes in cell membranes was first presented in an article, entitled "The Fluid Mosaic Model of the Structure of Cell Membranes," by S. J. Singer and Garth L. Nicolson [Science (Wash. DC), 175: 720–731, 1972]. This widely cited paper by Singer and Nicolson became a Current Contents Citation Classic.

S. Jonathan Singer is currently Professor of Biology and American Cancer Society Professor in the Department of Biology at the University of California at San Diego (UCSD). Dr. Singer was born May 23, 1924, in New York City. He attended Columbia University, where he received his B.A. and M.A. in Chemistry in 1943 and 1945, respectively. He graduated with a Ph.D. in Chemistry from the Polytechnic Institute of Brooklyn in 1947. Dr. Singer was Assistant Professor (1951–1957), Associate Professor (1957–1960), and Professor (1960–1961) at Yale University before becoming a Professor at UCSD in 1961.

Garth L. Nicolson is currently the David Bruton, Jr. Chair in Cancer Research, Professor of Tumor Biology, and Chairman of the Department of Tumor Biology at the University of Texas M. D. Anderson Cancer Center in Houston. He was born on October 1, 1943, in Los Angeles, receiving his B.S. in Chemistry in 1965. He graduated from the University of Hawaii School of Medicine with an M.S. in Biophysics in 1967 and from the University of California at San Diego with a Ph.D. in Cell Biology in 1970. He was on the staff of the Salk Institute for Biological Sciences in San Diego (1970–1975) and was a Professor of Cell Biology and Physiology at the University of California at Irvine (1975–1980) before moving to Houston in 1980.

Pictured are a figure from the paper showing the proposed organization of proteins and lipids in cell membranes and the authors, S. J. Singer (*left*) and Garth L. Nicolson (*right*). Photographs and information were kindly provided by Dr. Nicolson.

Sidney Weinhouse