Preface

The Nutrition and Cancer conference brought together 27 leading scientists who presented the latest information about the relationship between dietary factors and cancer. The keynote speaker, Sir Richard Doll, is well-known for his contributions to the epidemiologic information showing significant correlations between nutrition and cancer. Presentations by the other scientists addressed the roles of dietary fat, specific fatty acids, fiber, energy, microconstituents, minerals, methyl groups, tissue nucleotide ratios, diet-associated carcinogens and mutagens, molecular mechanisms of cancer initiation and promotion, and risk assessment. A panel discussion provided the basis for recommending the kinds of future research needed to elucidate the role of nutrition in cancer of humans.

Repeatedly during the conference speakers reminded attendees about the need for greater understanding of the molecular role of nutrients or their metabolites in cancer induction and promotion. There was general consensus that fat and calories were highly implicated in promoting cancer and that increasing the consumption of raw fruits and vegetables reduced cancer risk in humans. The attendees included active scientists in biochemistry, physiology, nutrition, toxicology, molecular and cellular biology, and clinical medicine, with individuals representing management, public policy, and regulatory activities.

The planning committee, chaired by Lionel A. Poirier, organized an excellent program. Credit and appreciation are extended to the authors of the papers submitted for these proceedings and to the anonymous reviewers of the manuscripts. Special appreciation is extended to Ms. Lili C. Merritt, conference manager of the International Life Sciences Institute, and her staff for shouldering responsibility in organizing the conference and coordinating the review and redactory processes of publication.

Willard J. Visek
University of Illinois
Urbana, IL

TABLE OF CONTENTS

Scientific Planning Committee and Faculty Listings ......................................................... 2022s

Foreword
Alex Malaspina ........................................... 2023s

Keynote Address

The Lessons of Life
Sir Richard Doll ........................................ 2024s

Session I: Fats and Energy

Role of Intervention Trials in Research on Nutrition and Cancer
Maureen M. Henderson .................................. 2030s

Dietary Energy and Fat Effects on Tumor Promotion
Diane F. Birt, Edward S. Kris, Myeon Choe, and Jill C. Pelling ............................... 2035s

Relationship between Dietary Fat and Experimental Mammary Tumorigenesis:
A Review and Critique
Clifford W. Welsch ...................................... 2040s

Differential Effects of Dietary Linoleic Acid on Mouse Skin-Tumor Promotion and
Mammary Carcinogenesis
Susan M. Fischer, Julius Leyton, Marilyn L. Lee, Mary Locniskar, Martha A. Belury,
Regina E. Malde, Thomas J. Slaga, and David H. Bechtel ..................................... 2049s

Dietary Fiber-mediated Mechanisms in Carcinogenesis
David M. Klurfeld ........................................ 2055s

Session II: Micronutrients and Microconstituents

Does β-Carotene Explain Why Reduced Cancer Risk Is Associated with Vegetable and Fruit Intake?
Regina G. Ziegler, Amy F. Subar, Neal E. Craft, Giske Ursin, Blossom H. Patterson, and
Barry I. Graubard ...................................... 2060s
Calcium, Vitamin D, and Colon Cancer
Harold L. Newmark and Martin Lipkin .................................................. 2067s

Methyl Groups in Carcinogenesis: Effects on DNA Methylation and Gene Expression
Elsie Wainfan and Lionel A. Poirier .................................................. 2071s

Orotic Acid, Nucleotide-Pool Imbalance, and Liver-Tumor Promotion: A Possible Mechanism for the Mitoinhibitory Effects of Orotic Acid in Isolated Rat Hepatocytes
Sharmila Manjeshwar, Aisha Sheikh, Giuseppina Pichiri-Coni, Pierpaolo Coni, Prema M. Rao, Srinivasan Rajalakshmi, Peter Pediaditakis, George Michalopoulos, and Dittakavi S. R. Sarma .................................................. 2078s

Nitrogen-stimulated Orotic Acid Synthesis and Nucleotide Imbalance
Willard J. Visek .................................................. 2082s

Inhibition of Carcinogenesis by Minor Dietary Constituents
Lee W. Wattenberg .................................................. 2085s

Session III: Diet-associated Carcinogens and Mutagens

Food-derived Mutagens and Carcinogens
Keiji Wakabayashi, Minako Nagao, Hiroyasu Esumi, and Takashi Sugimura .................. 2092s

Metabolic Activation and Genotoxicity of Heterocyclic Arylamines
Elizabeth G. Snyderwine, Herman A. J. Schut, Richard H. Adamson, Unnur P. Thorgeirsson, and Snorri S. Thorgeirsson .................................................. 2099s

Chemical Analysis, Prevention, and Low-Level Dosimetry of Heterocyclic Amines from Cooked Food
James S. Felton, Mark G. Knize, Michelle Roper, Esther Fultz, Nancy H. Shen, and Kenneth W. Turteltaub .................................................. 2103s

Metabolism of Food-derived Heterocyclic Amines in Human and Rabbit Tissues by P4503A Proteins in the Presence of Flavonoids
Ross A. McKinnon, Wendy M. Burgess, Pauline de la M. Hall, Zaiminuddin Abdul-Aziz, and Michael E. McManus .................................................. 2108s

Aflatoxins as Risk Factors for Hepatocellular Carcinoma in Humans
Gerald N. Wogan .................................................. 2114s

Session IV: Mechanisms and Risk Assessment

Alcohol and Cancer
William J. Blot .................................................. 2119s

Panel Discussion
Allan H. Conney (Session Chairperson), Richard H. Adamson, Ronald W. Hart, Robert J. Scheuplein, Arpad Somogyi, and Takashi Sugimura .................................................. 2124s

Author Index .................................................. 2126s
Cancer Research

52 (7 Supplement)

Cancer Res 1992;52:2035s-2107s.

Updated version  Access the most recent version of this article at: http://cancerres.aacrjournals.org/content/52/7_Supplement.citation

E-mail alerts  Sign up to receive free email-alerts related to this article or journal.

Reprints and Subscriptions  To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at pubs@aacr.org.

Permissions  To request permission to re-use all or part of this article, use this link http://cancerres.aacrjournals.org/content/52/7_Supplement.citation. Click on "Request Permissions" which will take you to the Copyright Clearance Center's (CCC) Rightslink site.