Contents

181 Antigenic Differences between Leukemia L1210 and a Subline Resistant to Methylglyoxal-bis(guanylhydrazone).
M. Kitano, E. Mihich, and D. Pressman.

187 Detection of Virus-associated Antigen on Membranes of Cells Productively Infected with Marek's Disease Herpesvirus.
Munir Ahmed and George Schidlovsky.

193 Specific Desensitization of Resistance against a Syngeneic Methylcholanthrene-induced Sarcoma in C3Hf Mice.
Jan Vaage.

200 The Effect of the Sequence of Administration of Cytoxan and Methotrexate on the Life-span of L1210 Leukemic Mice.
Marc J. Straus, Nathan Mantel, and Abraham Goldin.

208 Ultrastructural Alterations in the Liver Parenchymal Cells and Thymus Lymphocytes following the Administration of Hydrocortisone.
Toshiko Kodama and Mitsuo Kodama.

215 Ultrastructural Changes of Mitochondria of the Neoplastic Cells following the Administration of Corticosteroids.
Mitsuo Kodama, Toshiyasu Sugiyama, and Toshiko Kodama.

222 Additive Leukemogenicity of Urethan and X-irradiation in Infant and Young Adult Mice.

226 Influence of Insulin Deprivation on Growth of the 7,12-Dimethylbenz(a)anthracene-induced Mammary Carcinoma in Rats Subjected to Alloxan Diabetes and Food Restriction.
Jean-Claude Heuson and Nicole Legras.

233 Influence of Insulin Administration on Growth of the 7,12-Dimethylbenz(a)anthracene-induced Mammary Carcinoma in Intact, Oophorectomized, and Hypophysectomized Rats.
Jean-Claude Heuson, Nicole Legros, and Rudolf Heimann.

239 Regression of Stem-Cell Erythroblastic Leukemia after Hypophysectomy.
Charles Huggins and Hisao Oka.

243 Experimental Infection of Human Cervix by Herpesvirus Type 2 in Organ Culture.
Piero C. Balduzzi, Michael A. Nasello, and Marvin S. Amstey.

247 The Clinical Pharmacology of 5-Trifluoromethyl-2'-Deoxyuridine.

254 The Binding of 7,12-Dimethylbenz(a)anthracene to Mammary Parenchymal DNA and Protein in Vivo.

259 Synergetic Effect of 6-Mercaptopurine and 6-Methylmercaptopurine Ribonucleoside on the Levels of Adenine Nucleotides of Sarcoma 180 Cells.
E. M. Scholar, P. R. Brown, and R. E. Parks, Jr.

270 Graft-versus-Host Reactions and the Viral Induction of Mouse Lymphoma.
Esther F. Hays.

276 Development of Neoplasia and Karyotype Analysis in Mice with Graft-versus-Host Reaction.
Esther F. Hays.

280 The Use of the Proteolytic Enzyme Brinase to Produce Autocytotoxicity in Patients with Acute Leukemia and Its Possible Role in Immunotherapy.
R. Douglas Thorne, Patrick F. Deasy, Robert Carroll, Denis J. Reen, and J. Desmond MacDonell.

285 The Effects of Phenylalanine Ammonia-Lyase on Leukemic Lymphocytes in Vitro.
C. W. Abell, W. J. Stith, and D. S. Hodgins.

291 The Immunocompetency of the AKR Mouse.
Betty J. Hargis and Saul Malkiel.

298 Selective Suppression of Humoral and Cellular Immunity with Cytosine Arabinoside.
D. E. Griswold, G. H. Heppner, and P. Calabresi.

302 Fetal-type Isoenzymes in Hepatic and Non-hepatic Rat Tumors.
Françoise Farron, Howard H. T. Hsu, and W. Eugene Knox.

309 A Simple, Rapid Technique for Determination of the Effects of Chemotherapeutic Agents on Mammalian Cell-Cycle Traverse.
Robert A. Tobey.

317 A Delayed Cytotoxic Reaction for 6-Mercaptopurine.

323 Lethal Effect of Adriamycin on the Division Cycle of HeLa Cells.

326 The Role of Glutamine in the Oxidative Metabolism of Malignant Cells.
Z. Kovacević and H. P. Morris.

334 The Effects of Successive Transplant Generations of an Induced Tumor upon Inbred Rats.
Ralph F. Kampashmidt and Herbert F. Upchurch.

339 Altered Regulation of the Transport of RNA
from Nucleus to Cytoplasm in Rat Hepatoma Cells.
R. W. Shearer and E. A. Smuckler.

343 Immunobiological Studies of Tumors Induced by Murine Sarcoma Virus (Kirsten).

350 Inhibitory Effect of Cortisol in Vitro on 2-Deoxyglucose Uptake and RNA and Protein Metabolism in Lymphosarcoma P1798.
J. M. Rosen, J. J. Fina, R. J. Milholland, and F. Rosen.

356 Effect of Transient Immunosuppression on Host Response to Neonatally Introduced Oncogenic Virus.
Phyllis B. Blair.

360 Inherited Susceptibility of Inbred Strains of Syrian Hamsters to Induction of Subcutaneous Sarcomas and Mammary and Gastrointestinal Carcinomas by Subcutaneous and Gastric Administration of Polynuclear Hydrocarbons.
Freddy Homburger, Shung-Shing Hsueh, Clare S. Kerr, and Agnes B. Russfield.

367 A Quantitative Model for the Study of the Growth and Treatment of a Tumor and Its Metastases with Correlation between Proliferative State and Sensitivity to Cyclophosphamide.
William D. DeWys.

374 Studies Correlating the Growth Rate of a Tumor and Its Metastases and Providing Evidence for Tumor-related Systemic Growth-retarding Factors.
William D. DeWys.

380 Effects of N-Glucosamine, D-Mannosamine, and 2-Deoxy-d-glucose on the Ultrastructure of Ascites Tumor Cells in Vitro.
Z. Molnar and J. G. Bekesi.

390 Role of Catabolism in Pyrimidine Utilization for Nucleic Acid Synthesis in Vivo.
Geoffrey M. Cooper, W. F. Dunning, and Sheldon Greer.

398 Cell Cycle Phase Specificity of Antitumor Agents.
B. K. Bhuyan, L. G. Scheidt, and T. J. Fraser.

408 Enzymatic Estimation and Metabolism of 1-β-D-Arabinofuranosylcytosine in Man.
Richard L. Momparler, Aurora Labitan, and Mosé Rossi.

413 The Ultrastructure of Sarcoma I Cells and Immune Macrophages during Their Interaction in the Peritoneal Cavities of Immune C57BL/6 Mice.
Velma C. Chambers and Russell S. Weiser.

420 The Effect of Cyclophosphamide on Experimental Salivary Gland Neoplasia.
Robert Sheehan and Gerald Shklar.

426 Analysis of Serum Protein Changes in Patients with Advanced Gastric Cancer with Special Reference to α-Globulin Fractions.
Shoji Suga and Zyun Tamura.

430 In Vitro Studies on Heme Synthesis by Bone Marrow and Spleen Cell Suspensions from an Acute Myelogenous Leukemia in the Rat.
Evelyn E. Handler and Eugene S. Handler.

435 Detection of Activating Enzymes for 4-Nitroquinoline 1-Oxide Activation with a Microbial Assay System.
Shizuo Fukuda and Nobuto Yamamoto.

440 Repair Mechanism in Sendai Virus Carrying HeLa Cells after Damage by 4-Hydroxyminoquinoline 1-Oxide.
Tsugio Satoh and Nobuto Yamamoto.

444 Announcements.

COVER LEGEND

John Hill (1716–1775), of London, in 1761 published his “Cautions Against the Immoderate Use of Snuff,” in which he reported six cases of“polypusses” related to indulgence in tobacco in the form of snuff. One “polypus” was described as a swelling in one nostril that was hard, black, and adherent on a broad base. Painless at first, it later developed “all the frightful symptoms of an open cancer.”

Hill’s report precedes by over a decade the description of chimney sweeps’ scrotal cancer by Percival Pott and joins the late 18th century reports of Holland and of Soemmering on the association between use of tobacco and cancer of the lip. These clinical suspicions are fully corroborated by contemporary epidemiological and experimental studies (e.g., E. E. Peacock, Jr., et al., Ann. Surg., 151: 542–550, 1960 and R. L. Brown et al., Cancer, 18: 2–13, 1965).

The cover shows a portrait of Hill, his illustration of a tobacco plant, the title page of his important work, and a brief excerpt from the article in old type. Hill’s explanation of his findings and his advice have a modern ring in that they both still apply.

We are indebted to Dr. D. Eugene Redmond, Jr., for his rediscovery of Hill, the illustrations, and the text, as published in his article in the New England Journal of Medicine (282: 18–23, January 1970). Reproduction is by permission of Dr. Redmond, the New England Journal of Medicine, and the Trustees of the British Museum and the Wellcome Institute of the History of Medicine, London.