INDEX TO VOLUME 19

AUTHOR INDEX

In addition to the regular issues of Cancer Research, three supplements were issued during 1959, as follows:

Vol. 19, No. 3, Part 2, Cancer Chemotherapy Screening Data II, pages 1–280
Vol. 19, No. 6, Part 2, Cancer Chemotherapy Screening Data III, pages 281–408
Vol. 19, No. 10, Part 2, Cancer Chemotherapy Screening Data IV, pages 409–656

Each of these supplements is indexed, and a cumulative index is found in No. 10, Part 2. The articles appearing in those supplements are listed in this index by author only, and such entries are indicated by “CS” preceding the number, e.g., CS 9.

Adams, M. E. See Kamphesmidt, R. F., 286
Albert, R. E. See Gottschalk, R. G., 1070
Allen, P. B. R. See Bain, G. O., 93
Allison, J. B. See Crossley, M. L., 142
Alpert, L. K. See Gottschalk, R. G., 1070
Anderson, D. C. See Busch, H., 1080
Argus, M. F., and Kane, J. F. Chemotherapy studies with disulfonamido derivatives of fluorene, CS 285
Ashworth, C. T. See Erdmann, R. R., 1107
Avigan, J. The interaction between carcinogenic hydrocarbons and serum lipoproteins, 881
Bain, G. O., Allen, P. B. R., Silbermann, O., and Kowalewski, K. Induction in hamsters of biliary carcinoma by intracholecystic methylcholanthrene pellets, 93
Balis, M. E. Studies on the metabolism of human tumors, IV. Certain aspects of guanine metabolism, 297
— See Brody, S., 598
Barron, C. N., and Saunders, L. Z. Intraocular tumors in animals. II. Primary nonpigmented intraocular neoplasms, 1171
Bartuska, D. See Paschik, K. E., 1196
Bascov, L. T. See Field, J. B., CS 409
Bases, R. E. Some applications of tissue culture methods to radiation research, 311
— Modification of the radiation response determined by single cell technique: actinomycin D, 1263
Baumler, A. See Carruthers, C., 59
— See Carruthers, C., 380
Begg, R. W. See Trew, J. A., 1014
Belkin, M., Hardy, W. G., Perrault, A., and Sato, H. Swelling and vacuolization induced in ascites tumor cells by polysaccharides from higher plants, 1050
— See Leighton, J., 23
Bennett, L. L., Jr., Skipper, H. E., Smithers, D., and Hayes, E. H. Searches for exploitable biochemical differences between normal and cancer cells. IV. Utilization of nucleosides and nucleotides, 217
— See Brockman, R. W., 856
Berenbom, M. N14 distribution among chemical components of liver fractions in rats fed N14-labeled p-dimethylaminobenzene, 1045
Bergenstal, D. M. See Lipsett, M. B., 89
Bern, H. A. See DeOme, K. B., 515
Bernick, S. See Field, J. B., 870
Berwick, L. A comparison of surface ultrastructures of normal, papillomatous, and carcinomatous epidermal cells, 833
Best, W. R. See Winzler, R. J., 377
Bickis, I. J., Quastel, J. H., and Vas, S. I. Effects of Ehrlich ascites antisera on the biochemical activities of Ehrlich ascites carcinoma cells in vitro, 602
Bieber, S., and Hitchings, G. H. Effects of growth-inhibitors on amphibian tail blastema, 112
Biirger, R. N. See Cranston, E. M., CS 1
Binhammer, H. E. W. Water and lipide shifts in pregnancy, 970
Bittner, J. J., Hirsch, H. M., Ross, J. D., and Gabrielson, R. Host-induced changes in the mouse mammary tumor agent from transplanted tumors as determined by neutralization studies, 918
Blair, P. B. See DeOme, K. B., 515
Bloch-Frankenthal, L., and Ram, D. The relationship between the Crabtree effect and the oxidative metabolism of glucose and carbohydrate intermediates in ascites tumors, 885
Bollum, F. J., and Potter, V. R. Nucleic acid metabolism in regenerating rat liver. VI. Soluble enzymes which convert thymidine to thymidine phosphates and DNA, 561
Boo, L. M. See Muhlbock, O., 402
Booth, B. A., and Boutwell, R. K. Licking as a factor affecting dosage in skin carcinogenesis, 79
Bornstein, I. See Winzler, R. J., 577
Boryczka, A. See Field, J. B., CS 409
Bosch, D. K. See Boutwell, R. K., 413
Bourke, A. R. See Leiter, J., CS 309
— See Leiter, J., CS 488
Boutwell, R. K., and Bosch, D. K. The tumor-promoting action of phenol and related compounds for mouse skin, 413
— See Booth, B. A., 79
Bradner, W. T., and Clarke, D. A. Stimulation of host defense against experimental cancer. II. Temporal and reversal studies of the pyroconjunctivum effect, 673
Brindley, C. O. See Gold, G. L., 933
Brobst, D. F. See Olson, C., 779
— Sparks, C., Hutchison, D. J., and Skipper, H. E. A mechanism of resistance to 8-azaguanine. I. Microbiological studies on the metabolism of purines and 8-azapurines, 177
Brodsky, I. See Levy, H. B., 477
Broyd, S., and Balis, M. E. Mechanism of growth. I. Interrelation between deoxyribonucleic acid and deoxyribonucleic acid synthesis in nonmalignant growth, 538
— Johansson, E., and Thorell, B. On the growth activity of virus-induced leukemia cells, 1025
Brown, R. R. See Pamukcu, A. M., 921
mal, precancerous, and neoplastic mouse mammary tissues to hormones in vivo, 505

Ely, C. A. Inhibition of tumor formation in ovarian splenic implants after gonadotrophin antisemur, 37

Engeset, A. Intralymphatic injections in the rat, 277

Erdmann, R. R., Ashworth, C. T., and Buttram, V. Behavior of L1210 leukemia after heterologous transplantation in rats, 1107

Evans, C. A. See Chambers, V. C., 1188

Evans, E. S. See Simpson, M. E., 1096

Faulkin, L. J., Jr. See DeOme, K. B., 515

Feigelson, P., Uittmann, J. E., Harris, S., and Dashman, T. Cellular xanthine oxidase and uricase levels in leukemic and normal mice leukocytes, 1290

Feinstein, R. N., and Dainko, J. L. Use of 3-amino-1,2,4-triazole to reduce body catalase activity in cancer studies, 612


---, McCammon, C. J., Valentine, R. J., Bernick, S., Orr, C., and Starr, F. Failure of radiodine to induce thyroid cancer in the rat, 870

Filler, D. A. See Field, J. B., CS 409

Fischer, G. A. Nutritional and amethopterin-resistant characteristics of leukemic clones, 392

---, See Schindler, R., 47

Fiscus, J. See Kit, S., 201

Fishman, M. M. See Danishefsky, I., 1284

Fogh, J. See Edwards, G. A., 608

Fox, J. J. See Burchenal, J. H., 494

Fox, K. E. See Gabourel, J. D., 1210

Fraser, R. C. A tissue-specific primary response to Sarcoma 57 in the chick embryo, 33

Furth, J. A meeting of ways in cancer research: thoughts on the evolution and nature of neoplasms, 241


---, See Buffett, R. F., 1061

---, See Cohen, A. I., 72

---, See Haran-Ghers, N., 1181

---, See Metcalfe, D., 52

Gabourel, J. D., and Fox, K. E. Cell culture in vivo. I. Growth of L-fibroblast and Sarcoma 180 cell lines in diffusion chambers in vivo, 1210

Gabrielson, R. See Bittner, J. J., 918

Gardner, W. G. Experimental induction of uterine cervical and vaginal cancer in mice, 170

Gaul, G. E., and Villee, C. A. Activation of fluorooacetate by normal and partial pituitary tissue, 720

Gelboin, H. V., Miller, J. A., and Miller, E. C. The in vitro formation of protein-bound derivatives of aminoozo dyes by rat liver preparations, 975

Gellhorn, A. See Ullmann, J. E., 719

Gengozian, N., Peterson, W. J., and Makinodan, T. Killing effect of rat bone marrow in subethally irradiated LAF 1 mice, 534

Goddard, J. W. See Paschakis, K. E., 1196

Gold, C. L., Hall, T. C., Shneider, B. I., Seewrny, O., Colaky, J., Owens, A. H., Jr., Dederick, M. M., Holland, J. F., Brindley, C. O., and Jones, R. A clinical study of 5-fluorouracil, 955

Goldie, H., Walker, M., Chambers, K., and Roberts, V. Growth and implantation of free tumor cells in ascites tumors of mice previously given sex hormones, 28


---, See Liebling, M. E., 116

---, See Venditti J. M., 986

Goranson, E. S., Cintis, E., and Herzc, A. The effect of glucagon on tumor growth, 512

Gorer, P. A., and Kaliss, N. The effect of isoantibodies in vivo on three different transplantable neoplasms in mice, 824


---, ---, and Miller, P. O. The use of large amounts of radioactive sulfur in patients with advanced chondrosarcomas. II. Distribution and tissue irradiation, 1078

Grady, J. E. See Smith, C. G., 843

---, See Smith, C. G., 847

Graham, O. L. See Kit, S., 201

Green, J. A. See Waters, H. G., 326

Greenberg, D. M. See Rabinovitz, M., 388

---, See Sassenath, E. N., 399

Gross, A. L. See Kit, S., 201


Hall, T. C. See Gold, G. L., 935

Haran-Ghers, N., Furth, J., Buffett, R. F., and Yokoro, K. Studies on the pathogenesis of neoplasms by ionizing radiation. II. Neoplasms of endocrine organs, 1181

---, See Furth, J., 550

Hardy, W. G. See Belkin, M., 1030

Hargreaves, A. B., Lobo, L. C. G., Lemme, C. C., and Has-son, A. In vitro and in vivo inhibition of catalase by uric acid and other nucleic acid catabolites, 468

Harris, M. Growth measurements on monolayer cultures with an electronic cell counter, 1020

Harris, S. See Feigelson, P., 1280


Hasson, A. See Hargreaves, A. B., 468

Hauscho, J. S., Mitchell, J. T., and Niedrue, D. J. A reliable frozen tissue bank: viability and stability of 82 neoplastic and normal cell types after prolonged storage at -78 C., 649

Hayes, E. H. See Bennett, L. L., Jr., 217

Heller, A., and Pullman, B. Structure and carcinogenic activity of azo dyes, 618

Hemphill, S. C. See Burchenal, J. H., 494

Henderson, I. F., and LePage, G. A. Utilization of host purines by transplanted tumors, 67

---, ---. Utilization of host protein by 6C3HED ascites lymphosarcoma in C57 and Swiss mice, 749

---, ---, The nutrition of tumors: a review, 887

Herz, A. See Goranson, E. S., 512

Herrmann, F. See Sheerwin-Weidenreich, R., 1150

Himes, M. See Ogawa, K., 596

Hiramoto, R., Yagi, Y., and Pressman, D. Immunohistochemical studies of antibodies in anti-Murphy lymphosarcoma sera, 874

Hirsch, H. M. See Bittner, J. J., 918

Hirschberg, E. See Ullmann, J. E., 719

Hitchings, G. H. See Bieber, S., 112

Hohenstein, C. O., See Peters, E., 729

Holland, J. F. See Gold, G. L., 935

---, See Peters, E., 789

Hollander, R. H., McCall, M. S., and Lanz, H. C. A study of induced arsenic-74 in man, 1154

Hollander, N., and Hollander, V. P. In vivo estrogen synthesis by ovaries of high and low mammary tumor strains of mice, 290
Hollander, V. P. See Hollander, N., 290
Hollingsworth, J. W. Inhibition by cytoxic drugs of bone marrow regeneration after irradiation and marrow transplantation, 165
Holmberg, E. A. D. See Burchenal, J. H., 494
Honig, G. R. See Busch, H., 1080
Haieh, K. M., Mao, S. S., and Sananathorn, K. Serum lactic dehydrogenase activity after excision of transplanted tumors, 790
Huggins, C. Book review: International Symposium on Mammary Cancer, 359
Hughes, H. Fractionation of azo-peptides in digest, 472
Hummel, J. P. See Muchlbacher, C., 907
---. See Straumfjord, J. V., Jr., 919
Humphreys, R. See Liebling, M. E., 116
---. See Venditti, J. M., 896
Hurlbert, R. B. See Kammen, H. O., 654
Hutchison, D. J. See Brockman, R. W., 272
---. See Jacquez, J. A., 272
Irvin, J. L. See Wilson, J. E., 272
Jacquez, J. A., and Hutchison, D. J. Resistance in L1210 ascites without change in concentration of uptake of 5-diazoacetyl-2-serine or 6-diazo-5-oxo-L-norleucine, 397
Jewell, M. See Eaton, M. D., 945
Johnsson, E. See Brody, S., 1025
Johnson, I. S., and Wright, H. F. Anti-tumor activity of glucose, 537
Johnstone, R. M., and Scholesfield, P. G. The influence of amino acids and antimetabolites on glycine retention by Ehrlich ascites carcinoma cells, 1140
Jones, R. See Gold, G. L., 935
Jordan, C. See Sassenrath, E. N., 259
Kalla, R. L., and Rottino, A. Problems in the production of leukemia with cell-free extracts, 155
Kella, A. M. See Sassenrath, E. N., 259
Ketchel, M. M. See Castellanos, H., 689
Kit, S., Fiscus, J., Graham, O. L., and Gross, A. L. Metabolism and enzyme content of diploid and tetraploid lymphomas and carcinomas, 201
Kizer, D. E., and McCoy, T. A. The synthesis of hexosamine in tumor homogenates, 307
Klein, D. See Edinoff, M. L., 788
Klein, G. The usefulness and limitations of tumor transplantation in cancer research: a review, 343
Klein, M. Development of hepatomas in inbred albino mice following treatment with 20-methylcholanthrene, 1109
Kleinfeld, R. G., and von Haam, E. The effect of thiocetamide on rat liver regeneration. I. Cytological studies, 769
Kleinschmidt, W. J. The composition of ribonucleic acid and deoxyribonucleic acid of normal and neoplastic tissue, 966
Kline, L. See Goldin, A., CS 429
---. See Leighton, J., 23
Kloetzel, M. C. See Field, J. B., CS 409
Knisely, W. H. See Mahaley, M. S., Jr., 627
Knoll, J. See Eedinoff, M. L., 738
Kodlin, D. On the analysis of tumor induction experiments, 694
Korpässy, B. The hepatocarcinogenicity of tannic acid, 491
Kowalczyk, T. See Olson, C., 779
Kowalewski, C. See Bain, G. O., 98
Krahl, M. E. Obituary: George Henry Alexander Clowes, 384
Kruze, P. F., Jr., White, P. B., Carter, H. A. and McCoy, T. A. Incorporation of canavanine into protein of Walker carcinosarcoma 256 cells cultured in vitro, 122
---. See McCoy, T. A., 391
Lanz, H. C. See Holland, R. H., 1154
Leduc, E. H. Metastasis of transplantable hepatomas from the spleen to the liver in mice, 1091
Leighton, J., Kalla, R. L., Kline, I., and Belkin, M. Pathogenesis of tumor invasion. I. Interaction between normal tissues and "transformed" cells in tissue culture, 23
Leiter, J., and Schneiderman, M. A. Screening data from the Cancer Chemotherapy National Service Center Screening Laboratories, CS 31
---. Wodinsky, I., and Bourke, A. R. Screening data from the Cancer Chemotherapy National Service Center Screening Laboratories II, CS 309
---. Wodinsky, I., and Schneiderman, M. A. Screening data from the Cancer Chemotherapy National Service Center Screening Laboratories III, CS 488
Lemme, C. C. See Hargreaves, A. B., 468
Leon, R. P. de. See de Leon, R. P.
LePage, G. A. See Henderson, J. F., 67
---. See Henderson, J. F., 749
---. See Henderson, J. F., 887
Levy, H. B., and Brodsky, I. The effect of a leukemia virus on phosphorus uptake by mouse spleen, 477
Lewis, K. F., Majane, E. H., and Weinhouse, S. Metabolism of neoplastic tissue. XIV. Methyglyoxal formation during glucose catabolism in tumors, 97
Lindner, A. Cytotoxic effects of 5-fluorouracil on sensitive and resistant Ehrlich ascites tumor cells, 189
Lipsett, M. B., and Bergenthal, D. M. Metabolic effects of A-methopeterin in man, 89
Liu, K. See Wilson, J. E., 272
Lobo, L. C. G. See Hargreaves, A. B., 468
Lombard, L. S., and Witte, E. J. Frequency and types of tumors in mammals and birds of the Philadelphia Zoological Garden, 127
Lowenstein, J. M. See Calva, E., 101
Lummis, W. L. See Smith, C. G., 943
---. See Smith, C. G., 847
Mada, E. R. See Gross, L., 316
Mahaley, M. S., Jr., and Knisely, W. H. Effect of trypan blue upon distribution of metastases and transplants of rabbit VX2 and Walker rat 256 tumors, 657
Majane, E. H. See Lewis, K. F., 97
Makinodan, T. See Gengozian, N., 334
Malmgren, H., and Syvén, B. The histological distribution of arginase activity in solid mouse tumor transplants and a comparison with ascites tumors and normal tissues, 525
Mantel, N. See Ketcham, A. S., 940
Quastel, J. H. See Bickis, I. J., 602

Rabinovitz, M., Olson, M. E., and Greenberg, D. M. Effect of glutamine analogs on amino acid incorporation into protein of some normal and neoplastic cells in vitro, 388

Rajam, P. C. Radioiodinated antibody in the regression of subcutaneous Ehrlich mouse carcinoma, 393

Ram, D. See Bloch-Frankenthal, L., 835

Regelson, W. See Muehlbaecker, C., 907

Reid, M. R. See Tomisek, A. J., 489

Reppert, J. A. See Burchenal, J. H., 494

Rich, M. A. See Edleman, M. L., 521

Riley, E. E., Jr. Depression of liver catalase b.~ various agents, 1~54

Rottino, M. J. The effect of cortisone and hair cycle on the incidence of chemically induced epidermal tumors in mice, 1150

Rothstein, B. See Gold, G. L., 935

Silbermann, O. See Bain, G. O., 93

Simpson, M. E., and Evans, E. S. Effect of pituitary hormones on carcinogenesis induced in rats by 7,12-dimethylbenz[a]-anthracene, 1096

Simpson, M. S. See Brockman, R. W., 586


---, ---, ---, and ---. Structure-activity relationships and cross-resistance observed on evaluation of a series of purine analogs against experimental neoplasms, CS 287

---, ---, and ---. An improved tissue culture assay. I. Methodology and cytotoxicity of anti-tumor agents, 845

---, ---, and ---. An improved tissue culture assay. II. Cytotoxicity studies with antibiotics, chemicals, and solvents, 847

Smith, P. E. See Nadkarni, M. V., 713

Smith, R. R. See Olch, P. D., 464

Smithers, D. See Bennett, L. L., Jr., 217

Southam, C. M. See Munroe, J. S., 305

Sparks, C. See Brockman, R. W., 177

Sparrow, A. H. See Stein, O. L., 746

Starbuck, W. C. See Wuth, H., 684

Starr, P. See Field, J. B., 870

Stein, A. M., Murakami, W. L., and Visser, D. W. Purine synthesis in mouse tissues, 84

Stein, O. L., Sparrow, A. H., and Schairer, L. A. Leaf tumors induced in Graptopetalum paraguayense by gamma radiation, 746

Steiner, P. E., Camain, R., and Netik, J. Observations on cirrhosis of liver cancer at Dakar, French West Africa, 567

Stewart, H. L. The cancer investigator, 904

Stone, R. S. See Scott, K. G., 783

Stout, A. P. See Danishefsky, I., 1234

Strandveld, J. V., Jr., and Hummel, J. P. Anion polymers. IV. Microelectrophoresis of ascites tumor cells and the effect of polyoxyphosphatophosphate, 913

---. See Muehlbaecker, C., 907

Sturgis, S. H. See Castellanos, H., 680

Suggs, J. E. See Wilson, J. E., 272

Sugiura, K. Studies in a tumor spectrum. VIII. The effect of mitomycin C on the growth of a variety of mouse, rat, and hamster tumors, 438

Sylvén, B. See Malograno, H., 525

Tarnowski, G. S., and Bross, I. D. J. Ridit analysis of the effects of carcinostatic chemicals on the growth indices of the Nelson mouse ascites tumor, 581

Thompson, H. G., Jr. See Ulmann, J. E., 719

Thomson, J. R. See Brockman, R. W., 586

---. See Skipper, H. E., 425

---. See Skipper, H. E., CS 287

Thorell, B. See Brody, S., 1025

Tieckelmann, H. See Peters, E., 720


Topin, I. A tissue culture cytotoxic test for large-scale cancer chemotherapy screening, 929

Trams, E. G. See Nadkarni, M. V., 718
Index to Volume 19

Trew, J. A., and Begg, R. W. In vitro incorporation of acetate-1-C14 into adipose tissue from normal and tumor-bearing rats, 1014

Ulbrich, T. L. V. See McNair Scott, D. B., CS 15


Valentine, R. J. See Field, J. B., 870

Vas, S. I. See Bickis, I. J., 602


Villee, C. A. See Gaull, G. E., 726

Visser, D. W. See Stein, A. M., 84


von Haam, E. See Kleinfeld, R. G., 769

Vorhaus, L. J., II. Observations on the use of di-isopropyl fluorophosphate (DFP) in breast carcinoma, CS 283

Waisman, H. A. See Monder, C., 268

Walker, M. See Goldie, H., 28

Waters, H. G., and Green, J. A. The vascular system of two transplantable mouse granulosa-cell tumors, 826

Wattenberg, L. W. A histochemical study of succinic dehydrogenase and cytochrome oxidase in proliferative lesions of the large intestine, 1118

Weber, G., and Cantero, A. Fructose-1,6-diphosphatase and lactic dehydrogenase activity in hepatoma and in control human and animal tissues, 763

Weinhouse, S. See Lewis, K. F., 97

Welch, A. D. The problem of drug resistance in cancer chemotherapy, 339

Wells, W., and Winzler, R. J. Metabolism of human leukocytes in vitro. III. Incorporation of formate-C14 into cellular components of leukemic human leukocytes, 1086

West, D. Chemotherapeutical evaluation of diverse agents on transplanted mouse tumors, CS 281

Wexler, H. See Ketcham, A. S., 940

White, P. B. See Kruse, P. F., Jr., 122

White, W. D. See Browning, H. C., 819

Willmire, M. See Danishefsky, I., 1234

Williams, A. D. See Winzler, R. J., 577

Wilson, A. R. See Brockman, R. W., 836

Wilson, J. E., Irvin, J. L., Suggs, J. E., and Liu, K. Inhibition of growth and protein biosynthesis in Ehrlich ascites carcinoma by a-hydroxyamino acids and a-oximino acids, 272

Winzler, R. J., Wells, W., Shapira, J., Williams, A. D., Bornstein, I., Burr, M. J., and Best, W. R. Metabolism of human leukocytes in vitro. II. The effect of several agents on the incorporation of radioactive formate and glycine, 377

---. See Wells, W., 1086

Witte, E. J. See Lombard, L. S., 127

Wodinsky, I. See Leiter, J., CS 309

---. See Leiter, J., CS 488

Woernley, D. L. See Carruthers, C., 59

---. See Carruthers, C., 330

Woolley, G. W. See Merker, P. C., 664

Wright, H. F. See Johnson, L. S., 557

Wu, R. Leakage of enzymes from ascites tumor cells, 1217

Wynne, E. S. See Comstock, E. G., 880

Yagi, Y. See Hiramoto, R., 874

Yokoro, K. See Haran-Ghera, N., 1181

Yushok, W. D. Metabolism of ascites tumor cells. I. Rate of glycolysis and competitive utilization of fructose, mannose, and glucose, 104

Zack, G. See Schlumberger, H. G., 954

Zagerman, J. See Paschkis, K. E., 1196

Zaidenweber, J. See Ulmann, J. E., 719

Zajdela, F. See Monier, R., 987

Zeldman, I. Experimental studies on the spread of cancer in the lymphatic system. IV. Retrograde spread, 1114

Zigman, S., and Allison, J. B. Ribonuclease activity of protein-depleted and tumor-bearing rats, 1105

Zimmerman, H. M. See Ogawa, K., 596
6-Aminonicotinamide, antagonism of DPN-dependent enzymatic systems by. Pullman and Pullman, 337
Aminopterin, cytotoxic activity of, in tissue culture. Smith, Lumnis, and Grady, 847
Amino sugar synthesis of, in tumor homogenates. Kizer and McCoy, 307
3-Amino-1,2,4-triazole, reduction of body catalase activity by. Freudenstein and Dainko, 618
Ammonia, conversion to urea by perfused liver of azo-dye-fed rats. Burke and Miller, 622
Ammonium cells, human, micromorphologic changes in, during tryptophinization. Edwards and Fogh, 608
Amphibians, catalase and aldolase in livers of regenerating and tumor-bearing Triturus viridescens. Rothbard, 908
---, effects of growth-inhibitors on tail blastema of. Bieger and Hitchings, 112
Amputation, of tumor-bearing limb, effect on development of metastases, in mice. Ketcham, Wexler, and Mantel, 940
Analysis, statistical, of tumor induction experiments. Kodlin, 694
Androgen, effect of pretreatment with, on growth of ascites tumors in mice. Goldie, Walker, Chambers, and Roberts, 58
Antibiotics, cytotoxic activity of, in tissue culture assay. Smith, Lumnis, and Grady, 847
---, effect of actinomycin D on radiation response determined by single cell techniques. Bases, 1228
---, effect of mitomycin C on growth of mouse, rat, and hamster tumors. Sugirda, 488
Antibodies, in anti-Murphy lymphosarcoma sera, immunohistochemical studies of. Hiramoto, Yagi, and Pressman, 874
---, iso, effect in vivo on transplantable neoplasms in mice. Gorer and Kaliss, 884
---, radiiodinated, in regression of subcutaneous Ehrlich mouse carcinoma. Rajam, 338
Antihormone serum. See Gonadotrophic antiserum.
Antimetabolites, and anticancer activity, review. Montgomery, 447
---, effect of methionine analogs on glycine retention by Ehrlich ascites cells. Johnstone and Scholefield, 1140
Antiserum, against human chorionic gonadotrophin, effect on antisera, against human chorionic gonadotrophin, effect on antihormone serum.
---, against mammary tumor agent, effect of. Bittner, Hirsch, Ross, and Gabrielson, 918
---, against whole Ehrlich ascites carcinoma cells, effects of. Bickis, Quastel, and Vas, 692
---, effect on transplantable neoplasms in mice in vivo. Gorer and Kaliss, 884
---, gonadotrophic, inhibition of tumor formation in ovarian splenic implants by. Ely, 37
Anti-tumor agents. See Chemotherapy.
Arginase, distribution of, in fractions of Ehrlich ascites and liver cells from glyceral homogenates. Carruthers, Woernley, Baumler, and Davis, 69
---, histological distribution of, in solid and ascites mouse tumors and normal tissues. Malurgren and Sylvén, 283
Arginine. See also Amino acids.
---, conversion to urea by perfused liver of azo-dye-fed rats. Burke and Miller, 622
Arginine analog, incorporation of canavanine into protein of Walker 256 cells in vitro. Kruse, White, Carter, and McCoy, 182
Arsenic-74, inhalation of, from impregnated cigarettes. Hollingsworth, 165
---, inhibition of E. coli by, reversed by phenylalanine and tryptophan. Tomieck, Reid, and Skipper, 489
Azaserine, cytotoxic activity of, in tissue culture. Smith, Lumnis, and Grady, 847
---, mechanism of resistance to, with experimental neoplasms. Brockman, Bennett, Simpson, Wilson, Thomson, and Skipper, 856
---, resistance to inhibition by, in Streptococcus faecalis mutants. Brockman, Sparks, Hutchison, and Skipper, 177
---, sensitivity to, of Leukemia L1210 in mice, lack of effect on xanthine oxidase and uricase levels in leukocytes. Feigelson, Ulmann, Harris, and Dashman, 1230
Azaspirofulvenes, metabolism of, by mutants of Streptosacidus faecalis. Brockman, Sparks, Hutchison, and Skipper, 177
Azaserine. See also 6-Diazo-5-oxo-L-serine.
---, cytotoxic activity of, in tissue culture. Smith, Lumnis, and Grady, 847
---, inhibition of bone marrow regeneration by, after irradiation and marrow transplantation. Hollingsworth, 165
---, inhibition of E. coli by, reversed by phenylalanine and tryptophan. Tomieck, Reid, and Skipper, 489
---, resistance to inhibition by, in Streptococcus faecalis mutants. Brockman, Sparks, Hutchison, and Skipper, 177
---, N15 distribution among liver fractions in rats fed d-dimethylamino-azobenzene-N15. Berenborn, 1045
---, azo-peptides, fractionation of, in tryptic digests of rat liver. Hughes, 472
Bank, frozen tissue, of neoplastic and normal cell types. Haushka, Mitchell, and Niederpruem, 648
---, incorporation into serum with lipoproteins. Avigan, 381
Benbamidazole mustard. See 2-(Di-(2-chloroethyl)aminomethyl)-benzimidazole.
---, in vivo administration of, effect on subsequent formation of protein-bound derivatives of aminoazo dyes by rat liver. Gelboin, Miller, and Miller, 975
Benzyloximino acids, inhibition of growth and protein biosynthesis in Ehrlich ascites carcinoma by. Wilson, Irvin, Sugis, and Liu, 272
---, mouse, histological distribution of arginase in. Malurgren and Sylvén, 283
---, relationship of tumor necrosis to white blood cell changes in the hamster. Shereman, 485
---, effect of sex hormones on growth of. Goldie, Walker, Chambers, and Roberts, 28
---, lack of effect of glucagon on. Johnson and Wright, 557
---, azaserine, cytotoxic activity of, in tissue culture. Smith, Lumnis, and Grady, 847
---, Azaspirofulvenes, metabolism of, by mutants of Streptosacidus faecalis. Brockman, Sparks, Hutchison, and Skipper, 177
---, skin, histological distribution of arginase in. Malurgren and Sylvén, 283
---, relationship of tumor necrosis to white blood cell changes in the hamster. Shereman, 485
5-Bromodeoxyuridine, effect on incorporation of precursors - Bone marrow, rabbit, utilization of glutamine-C
Blood supply,
Book review, Geschwülste der Laboratoriumsnagetiere. Dunn, 688
- International Symposium on Mammary Cancer. Huggins, 389
Bovine cutaneous papilloma agent, urinary bladder tumor induced by. Olson, Pamukcu, Brobst, Kowalczyk, Satter, and Price, 779
Breast, cancer of, clinical evaluation of thermography and heptyl aldehyde in detection of. Vogler and Powell, 207
d-2-Brom-isopropyl isocyanate, anti-tumor and serotonin-blocking effect of, in rats. Scott and Stone, 783
5-Bromodeoxyuridine, effect on incorporation of precursors into nucleic acid pyrimidines. Eidihoff, Knoll, Marano, and Klein, 738
5-Bromouracil, cytotoxic activity of, in tissue culture. Smith,

Carcinogens, as factor in tumor frequency in mammals and birds of Philadelphia Zoological Garden. Lombard and Witte, 127
Carcinoma 755.
Carcinoma 1025, destructive effect of mitomycin C on. Sugiu
Carcinoma 256 Walker. See Walker carcinosarcoma 256
Cartilage, epiphyseal, growth hormone-induced growth of, in mice. Blackburn, 488
Carzinophilin, cytotoxic activity of, in tissue culture. Smith, Lunnis, and Grady, 847
Busulfan. See Myleran.

C 57 Black leu kosis, effect of isountibodies in vivo on, in mice. Gorer and Kaliss, 829
C cell line, tissue cultured, tumorigenicity of, in conditioned rats. McAllister and Coriell, 1040
Canavanine, incorporation into protein of Walker carcinosarcoma 256 cells in vitro. Kruse, White, Carter, and McCoy, 122
Cancer, of liver, at Dakar, French West Africa. Steiner, Ca-
mair, and Netlik, 967
Cancer cells, invasion by, studied with sponge-matrix culture technic. Leighton, Kalla, Kline, and Belkin, 93
Cancer investigator, presidential address. Stewart, 801
Cancer research, meeting of ways in, presidential address. Farhi, 341
Canine oral papillomatosis, virus assay and stages of. Chambers and Evans, 9188
Carbamyl phosphate-asp tate transcarbamylase, activity in hepato
tax and Ehrlich ascites cells. Calva, Lowenstern, and Cohen, 101
- activity in regenerating rat liver. Calva and Cohen, 679
O-Carbamyli
erine, effect on glutamine incorporation into protein of normal and tumor tissues. Rabinovitz, Olson, and Brown, 967
Carbohydrate metabolism, and Crabtree effect, in ascites tu-
mor cells. Bloch-Frankenthal and Ram, 385
Carbohydrate nutrition, of tumors, review. Henderson and Le-
Page, 387
Carboxymethylcellulose acids, with urea and adipic acid, in-
duction of vaginal cancer after intravaginal instillation of. Gardner, 170
Carcinogenesis, and structure of azo dyes. Heller and Pullman, 618
- liliary carcinoma in hamsters, induced by intracholecystic pellets of methylcholanthrene. Rain, Allen, Silberman, and Kowalewski, 98
- by DAB, proportions of cell types in rat liver during. Daoust and Cantero, 787
- by plastic films, biochemical changes during, in rat. Danishsky, Oppenheimer, Willhite, Stout, and Fishman, 1234
- death of cortisone and hair cycle on induced epidermal

Blood supply, of two transplantable mouse granulosa-cell tu-
mors. Waters and Green, 396
Bone marrow, rabbit, utilization of glutamine-C by, inhibited by 0-carbamamylserine. Rabinovitz, Olson, and Greenberg, 388
- rat, killing effect in subeutaneously irradiated mice. Geon-
gozzi, Peterson, and Makinodan, 534
- regeneration inhibited by cytotoxic drugs, after irradia-
tion and transplantation of marrow. Hollingsworth, 165
Book review, Geschwülste der Laboratoriumsnagetiere. Dunn, 688
- International Symposium on Mammary Cancer. Huggins, 389
Bovine cutaneous papilloma agent, urinary bladder tumor induced by. Olson, Pamukcu, Brobst, Kowalczyk, Satter, and Price, 779
Breast, cancer of, clinical evaluation of thermography and heptyl aldehyde in detection of. Vogler and Powell, 207
d-2-Brom-isopropyl isocyanate, anti-tumor and serotonin-blocking effect of, in rats. Scott and Stone, 783
5-Bromodeoxyuridine, effect on incorporation of precursors into nucleic acid pyrimidines. Eidihoff, Knoll, Marano, and Klein, 738
5-Bromouracil, cytotoxic activity of, in tissue culture. Smith,

Carcinogens, as factor in tumor frequency in mammals and birds of Philadelphia Zoological Garden. Lombard and Witte, 127
Carcinoma 755.
Carcinoma 1025, destructive effect of mitomycin C on. Sugiu
Carcinoma 256 Walker. See Walker carcinosarcoma 256
Cartilage, epiphyseal, growth hormone-induced growth of, in mice. Blackburn, 488
Carzinophilin, cytotoxic activity of, in tissue culture. Smith, Lunnis, and Grady, 847
Busulfan. See Myleran.

C 57 Black leu kosis, effect of isountibodies in vivo on, in mice. Gorer and Kaliss, 829
C cell line, tissue cultured, tumorigenicity of, in conditioned rats. McAllister and Coriell, 1040
Canavanine, incorporation into protein of Walker carcinosarcoma 256 cells in vitro. Kruse, White, Carter, and McCoy, 122
Cancer, of liver, at Dakar, French West Africa. Steiner, Ca-
mair, and Netlik, 967
Cancer cells, invasion by, studied with sponge-matrix culture technic. Leighton, Kalla, Kline, and Belkin, 93
Cancer investigator, presidential address. Stewart, 801
Cancer research, meeting of ways in, presidential address. Farhi, 341
Canine oral papillomatosis, virus assay and stages of. Chambers and Evans, 9188
Carbamyl phosphate-asp tate transcarbamylase, activity in hepato
tax and Ehrlich ascites cells. Calva, Lowenstern, and Cohen, 101
- activity in regenerating rat liver. Calva and Cohen, 679
O-Carbamyli
erine, effect on glutamine incorporation into protein of normal and tumor tissues. Rabinovitz, Olson, and Brown, 967
Carbohydrate metabolism, and Crabtree effect, in ascites tu-
mor cells. Bloch-Frankenthal and Ram, 385
Carbohydrate nutrition, of tumors, review. Henderson and Le-
Page, 387
Carboxymethylcellulose acids, with urea and adipic acid, in-
duction of vaginal cancer after intravaginal instillation of. Gardner, 170
Carcinogenesis, and structure of azo dyes. Heller and Pullman, 618
- liliary carcinoma in hamsters, induced by intracholecystic pellets of methylcholanthrene. Rain, Allen, Silberman, and Kowalewski, 98
- by DAB, proportions of cell types in rat liver during. Daoust and Cantero, 787
- by plastic films, biochemical changes during, in rat. Danishsky, Oppenheimer, Willhite, Stout, and Fishman, 1234
- death of cortisone and hair cycle on induced epidermal
tumors in mice. Sherwin-Weideneich, Hermann, and Rothstein, 1150
- experimental, of uterine cervix and vagina in mice, with hormone and other treatment. Gardner, 170
- experimental, of various endocrine glands, review. Clif-
ton, 31
- glutamine and glutamic acid metabolism in perfused liv-
ers of azo dye-fed rats. Burke and Miller, 148
- hepato mas in mice following treatment with 20-methyl-
cholanthrene. Klein, 1109
- indirect induction mechanisms in, review. Kaplan, 791
- induced in rats by 7,12-dimethylbenz(a)anthracene, effect of pituitary hormones on. Simpson and Evans, 1096
- induction of mammary tumors of the rat by various agents, review. Noble and Cutta, 1125
- inhaled arsenic-74, from impregnated cigarettes. Holland, McCall, and Lanz, 1154
- in skin, licking as factor affecting dosage in. Booth and Boutwell, 79
- leukemogenic action of 2-acetylaminofluorenone, in the rat. Hartmann, Miller, Miller, and Morris, 210
- of bladder, and tryptophan metabolites. Panukcu, Brown, and Price, 931
- of mammary glands, induced by isografts of hypophyses in mice. Muhlbock and Boot, 402
- tumor-promoting action of phenol and related com-
ounds for mouse skin. Boutwell and Besch, 413
- urea production in perfused liver of rats fed 3'-methyl-
dimethyIaminopropylene. Burke and Miller, 1122
- viral, endocrine, radiation, review. Furth, 341
Carcinogenic hydrocarbons, and serum lipoproteins. Avigan, 881
Carcinogenicity, of tannic acid, on liver. Korp'~ssy, 501
Carcinogens, as factor in tumor frequency in mammals and birds of Philadelphia Zoological Garden. Lombard and Witte, 127
Carcinoma 755. See Adenocarcinoma 755.
Carcinoma 1025, destructive effect of mitomycin C on. Sugiu,
348
Carcinosarcoma 256 Walker. See Walker carcinosarcoma 256
Cartilage, epiphyseal, growth hormone-induced growth of, inhibited by 5-flourouracil. Burke and Miller, 148
Catalase, activity of, in liver and kidney, after toxohormone administmation. Kampschmidt, Adams, and McCoy, 236
- activity reduced by 3-amino-l,2,4-triazole. Steinert and Daniko, 614
- inhibition by uric acid and other nucleic acid catabolites, in vivo and in vitro. Hargreaves, Lobo, Lemne, and Hasson, 468
- in livers of regenerating and tumor-bearing Triurus viridescens. Rothhardt, 1166
- liver, depressed by various agents, in normal and tumor-
bearing mice. Riley, 925
Cattle, urinary bladder tumor of, induced by cutaneous papil-
oma agent. Olson, Pamukcu, Brobst, Kowalczyk, Satter, and Price, 779
Cell counter, electronic, for growth measurements on mono-
layer cultures. Harris, 1620
Cell culture. See also Culture and Tissue culture.
- in vivo, in diffusion chambers, in mice. Gabourel and Fox, 1210
Cell lines, from various tissues, cultured, tumorigenicity of, in conditioned rats. McAllister and Coriell, 1040
Cell fractionation, of Ehrlich ascites and liver cells in glycero
Cloudman S-91 melanoma—Continued
— Irradiated, capacity to grow as pulmonary metastasis, in mouse. Ohlck, Eck, and Smith, 464
Clowes, G. H. A., obituary. Krahl, 334
Colchicine, cytotoxic activity of, in tissue culture. Smith, Lummis, and Grady, 547
Cold storage, of neoplastic and normal cell types, in frozen tissue bank. Hauschka, Mitchell, and Niederpruem, 643
Collodion, implanted intravaginally, lack of tumor induction by, in mice. Gardner, 170
Comment, on 6-aminonicotinamide antagonism of DPN-dependent enzymatic systems. Pullman and Pullman, 337
Conditioning, of Swiss mice with x-radiation and cortisone, for transplants of H.Ep. 59. Merker and Woolley, 664
Conjugated. See Chang's conjugativa.
Connective tissue, relation to invasiveness of normal and malignant cells in tissue culture. Leighton, Kalla, Kline, and Belkin, 23
Copper, in catalysis of dopa oxidation, reaction inhibited by human leukemic plasma. Monder and Waismann, 268
Corticotropin, assay with transplantable adenocortical tumor slices. Cohen and Furtth, 72
Cortisol, with mannitol, effect on mammary tissues in organ culture. Elias and Rivera, 505
Cortisone, effect on induced epidermal tumors in mice. Sherwin-Weidenreich, Herrmann, and Rothstein, 1150
— effect on mouse spleen after infection with Friend leukemia. Levy and Brodsky, 477
— effect on regression of subcutaneous Ehrlich mouse carcinoma with radioidinated antibody. Rajam, 398
— effect on Sarcoma 180 in pyridoxine-deficient mice. Mitchell, 131
— failure to induce thyroid cancer in the rat. Field, McCammon, Valentine, Bernick, Orr, and Starr, 779
Cows, Turkish, with urinary bladder cancer, and tryptophan metabolites in urine of. Pamukcu, Brown, and Price, 921
Crankham sarcoma, effect of mitomycin C on growth of. Sugiura, 438
Crabtree effect, and oxidative metabolism in ascites tumor cells. Searle, 438
Crabtree effect, and oxidative metabolism in ascites tumor cells. Bloch-Frankenthal and Ram, 885
Culture. See also Cell culture and Tissue culture.
— of organs of chick embryo, with mouse Sarcoma 37 cells. Fraser, 38
Cutaneous papilloma agent, bovine, urinary bladder tumor induced by. Olson, Pamukcu, Brobst, Kowalczyk, Satter, and Price, 779
Cyanoide, effect on viability measurements of Ehrlich ascites cells. Eaton, Scala, and Jewell, 945
Cycloheximide, tissue culture assay of, methodology and cytotoxicity. Smith, Lummis, and Grady, 547
Cysteine, S-ethyl. See S-Ethyl cysteine.
Cytidine nucleotides, from orotic acid, by Novikoff tumor in vitro. Kammen and Hurlibert, 654
Cytotoxic effects of, 5-flourouracil on Ehrlich ascites cells. Lindner, 189
Cytochrome oxidase, activity in epidermis during malignant transformation. Carruthers, Woerden, Baumber, and Davis, 330
— distribution of, of fractions of Ehrlich ascites and liver cells from glyceral homogenates. Carruthers, Woerden, Baumber, and Davis, 39
— in lesions of large intestine, in human. Wattenberg, 1118
Cytosomes, in rat and mouse tumors, low-temperature spectrographic study of. Monier, Zajdela, Chaix, and Petit, 927
Cytogenetics, of neoplastic cells, and tumor transplantation, review. Klein, 345
— relation to cancer, review. Furtth, 241
Cytological studies, DNA content of experimental mouse tumor cells. Ogawa, Himes, Pollister, and Zimmermann, 596
Cytology, immunohistochemical studies of antibodies in anti-Murphy lymphosarcoma sera. Hiramoto, Yagi, and Pressman, 574
— of human amnion cells after trypsinization. Edwards and Pogh, 608
— of regenerating rat liver, effect of thioacetamide on. Kleinfeld and von Haam, 769
Cytoxin, from orotic acid, by Novikoff tumor in vitro. Kammen and Hurlibert, 654
Cytotoxicity test, tissue culture, for large-scale cancer chemotherapy screening. Toplin, 939
Cytosan, activity against leukemia L1210, in mice. Venditti, Humphreys, and Goldin, 986
D-189 cells, invasiveness of, in tissue culture. Leighton, Kalla, Kline, and Belkin, 23
DAB. See 4-Dimethylaminobenzene.
Dakar, French West Africa, cirrhosis and liver cancer at. Stein, Camain, and Netik, 567
Daraprim. See 2,4-Diamino-5-(3',4'-dichlorophenyl)-6-ethylpyrimidine.
Dbbr tumor, spontaneous mammary adenocarcinoma, in mice, inhibition of growth of, by sensitized rat lymph nodes. Castelanos, Ketchel, and Sturgis, 689
Daraprim. See 2,4-Diamino-5-(3',4'-dichlorophenyl)-6-ethylpyrimidine.
Dabur tumor, spontaneous mammary adenocarcinoma, in mice, inhibition of growth of, by sensitized rat lymph nodes. Castelanos, Ketchel, and Sturgis, 689
Dacar, French West Africa, cirrhosis and liver cancer at. Stein, Camain, and Netik, 567
Dabur tumor, spontaneous mammary adenocarcinoma, in mice, inhibition of growth of, by sensitized rat lymph nodes. Castelanos, Ketchel, and Sturgis, 689
Dacar, French West Africa, cirrhosis and liver cancer at. Stein, Camain, and Netik, 567
Deoxyribonucleic acid. See also Nucleic acids.
— biosynthesis of, by cell-free extracts of mouse leukemic cells. Mantavinos and Canellakis, 1399
— changes in content of, in experimental mouse tumors. Ogawa, Himes, Pollarist, and Zimmermann, 596
— composition of, of normal and neoplastic mouse and chicken tissues. Kleinischmidt, 966
— distribution in Ehrlich ascites cells after treatment with 5-fluorouracil. Lindner, 189
— in diploid and tetraploid tumors, in mice. Kit, Ficus, Graham, and Gross, 201
— of H.Ep. 51 cells, in tissue culture treated with 5-fluorodeoxyuridine. Eiindoff and Rich, 521
— physicochemical characterization of, from human leukemic leukocytes. Polli, Rosoff, di Mayora, and Cavalieri, 159
— synthesis in vivo and in vitro in regenerating rat liver. Bollum and Potter, 561
— synthesis of, and deoxyribonucleic acid, in nonmalignant growth. Brody and Balis, 338
Detergents, cytotoxic activity of, in tissue culture assay. Smith, Lummis, and Grady, 547
2,4-Diamino-5-(3-chlorophenyl)-6-azapyrimidine, effect on formate incorporation into normal and leukemic human leukocytes in vitro. Winzler, Wells, Shapira, Williams, Bornstein, Burr, and Best, 577
2,4-Diamino-5-(3',4'-dichlorophenyl)-6-ethylpyrimidine, effect on formate incorporation into normal and leukemic human leukocytes in vitro. Winzler, Wells, Shapira, Williams, Bornstein, Burr, and Best, 377
Diaphorase, activity in epidermis during malignant transformation. Carruthers, Woerden, Baumber, and Davis, 330
0-Diazoacetyl-L-serine. See also Azaserine.
— concentrative uptake of, in two lines of leukemia L1210 ascites. Jacobz and Hutchison, 397
— effect on formate incorporation into normal and leukemic human leukocytes in vitro. Winzler, Wells, Shapiro, Williams, Bornstein, Burr, and Best, 377
5-Diazo-5-oxo-L-norleucine, concentrative uptake of, in two lines of leukemia L1210 ascites. Jacobz and Hutchison, 397
— effect on formate incorporation into normal and leukemic
human leukocytes in vitro. Winzler, Wells, Shapiro, Williams, Bornstein, Burr, and Best, 377

5-Diazouracil, carcinostatic activity of, against rodent tumors. Sassenrath, Kells, and Greenberg, 259

1,2,3,4-Dibenzanthracene-9,10-C, incorporation into serum with lipoproteins. Avigan, 851

1,2,6-Dibenzanthracene-9,10-C, incorporation into serum with lipoproteins. Avigan, 851

2-[Di-(2-chloroethyl)-aminomethyl]benzimidazole, clinical evaluation of. Ultmann, Thompson, Hirschberg, Zaidenweber, and Gellhorn, 719

1,2,5,6-Dibenzanthracene-9,10-C, low-protein, basal, numerical proportions of cell types in p-Di(2-chloroethyl)aminophenyl butyric acid.

m-Di-[2-chloroethyl]amino-phenyl butyric acid. See also Chlorambucil.

Diet, deficient in pyridoxine, effect on mouse Sarcorna 180. Mihich and Nichol, 279

---, low-protein, basal, numerical proportions of cell types in liver of rats on. Daoust and Cantero, 757

---, protein-free, effect on ribonuclease activity of rats on. Zigman and Allison, 1105

Diethylphenylphosphoramide, and derivatives, structure and carcinostatic activity of. Crossley, Allison, and Seeger, 142

Diethylstilbestrol, effect of pretreatment with, on growth of ascites tumors in mice. Goldie, Walker, Chambers, and Roberts, 28

Diffusion chambers, growth of cell lines in, in vivo, in mice. Gabourel and Fox, 1210

3,4-Dihydroxyphenylalanine, oxidation of, inhibited by human blood plasma in leukemia and cancer. Monder and Waisman, 246

4-Dimethylaminobenzene, proportions of cell types in rat liver during carcinogenesis by. Daoust and Cantero, 757

p-Dimethylaminobenzene-N, N distribution among liver fractions of rats fed. Berenbom, 1045

Dimethylbenzanthracene, with phenol in induction of tumors of mouse skin. Boutwell and Bosch, 418

9,10-Dimethyl-1,2-benzanthracene, in benzene or mineral oil. Finger, 1046

9,12-Dimethylbenzanthracene, carcinogenesis in rats induced by, effect of pituitary hormones on. Simpson and Evans, 1096

---, epidermal tumors in mice induced by, effect of cortisone and hair cycle on incidence. Sherrwin-Weidenreich, Herrmann, and Rochte, 1150

Dinitrophenol, effect on viability measurements of Ehrlich ascites cells. Eaton, Scala, and Jewell, 945

Dioxane, cytotoxic activity of, in tissue culture. Smith, Lummis, and Grady, 947

2,6-Dioxo-5-diazopyrimidine. See 5-Diazouracil.

Dogs, effect of benzimidazole mustard on. Ultmann, Thompson, Hirschberg, Zaidenweber, and Gellhorn, 719

---, oral papillomatosis of, virus assay and stages of. Chambers and Evans, 1188

---, primary nonpigmented intraocular tumors in. Barron and Saunders, 1171

Dopa. See 3,4-Dihydroxyphenylalanine.

Dopa oxidase, activity in amelanotic melanoma tissue. Comstock, Wyman, and Russell, 889

DPNH-cytochrome c reductase, activity in epidermis during malignant transformation. Carruthers, Woerently, Baumler, and Davis, 390

Drug resistance, in cancer chemotherapy. Welch, 339

Dye exclusion, as method of measuring viability of Ehrlich ascites cells. Eaton, Scala, and Jewell, 945

Eagle's KB cells. See KB cells.

Egg yolk, boiled, in depression of liver catalase in mice. Riley, 282

Ehrlich ascites carcinoma, amino acid incorporation into proteins of, inhibited by glutamine analogs. Rabinozvitz, Olson, and Greenberg, 388

---, biochemical effects of Ehrlich antisera. Bicks, Quastel, and Vas, 606

---, carbamyl phosphate-aspartate transcarbamylase activity in. Calva, Lowenstein, and Cohen, 101

---, clone 2, effect of 2-methylthio-4-(substituted-anilino)-5-carboximidopyrimidines on. Peters, Holland, Bryant, Minnemeyer, Hohenstein, and Tieckelmann, 729

---, clone 2, in mouse, effect of pyridoxine deficiency on. Mihich, Rosen, and Nichol, 1244

---, cytochemical effects of 5-diazouracil on. Lindner, 189

---, destructive effect of mitomycin C on. Sugitara, 438

---, effect of amino acids and antimetabolites on glycine reten tion by. Johnstone and Scholefield, 1140

---, effect of hydroxylaminino and oximino acids on growth and protein biosynthesis in. Wilson, Irving, Suggs, and Liu, 272

---, effect of sex hormones on growth of. Goldie, Walker, Chambers, and Roberts, 28

---, glycerol homogenates of, enzyme distribution in fractions of. Carruthers, Woerently, Baumler, and Davis, 59

---, histological distribution of arginase in. Malmgren and Sylvén, 325

---, induced by p-dimethylaminobenzene, low-temperature spectrographic study of cytochromes in. Monier, Zajdela, Chaix, and Petit, 927

---, lack of effect of glucagon on. Johnson and Wright, 557

---, leakage of enzymes from. Wu, 1417

---, microelectrophoresis of, and effect of polyxenylphosphate. Straumfjord and Hummel, 913

---, P incorporation by, in vitro. Creaser, de Leon, and Scholefield, 705

---, radiodinated antibody in regression of subcutaneous. Rajam, 392

---, relation between Crabtree effect and oxidative metabolism of. Bloch-Frankenthal and Ram, 385

---, tetraploid, metabolism and enzyme content of. Kit, Ficus, Graham, and Gross, 211

---, utilization of glutamine-C by, stimulated by 0-carbamylserine. Rabinovitz, Olson, and Greenberg, 388

---, utilization of host purines by transplanted, in mice. Henderson and LePage, 67

---, viability of, measured by dyes, respiration, and other agents. Eaton, Scala, and Jewell, 945

Ehrlich carcinoma, ascites and solid form, distribution and metabolism of polyxenylphosphate in, in mice. Muehlbacher, Straumfjord, Hummel, and Regelke, 907

---, solid form, effect of pyridoxine deficiency on. Mihich, Rosen, and Nichol, 1244

---, solid form, purine synthesis in, in vivo. Stein, Murakami, and Visser, 84

Electronic cell counter, growth measurements on monolayer cultures with. Harris, 1021

Electron microscopy, of avian lymphomatosis virus propagated in tissue culture. Davies and Sharpless, 283

---, of early effects of 3'-Me-DAB on rat liver cells. Porter and Bruni, 997

---, of human amniotic cells during trypanpinization. Edwards and Fogg, 608

---, of rat and mouse tumors in study of cytochromes. Monier, Zajdela, Chaix, and Petit, 927

---, surface ultrastructures of normal and tumorous epidermal cells. Berwick, 833

Electrophoresis, micro, of ascites tumor cells, and effect of polyxenylphosphate. Straumfjord and Hummel, 913

---, of hyaluronic acid-protein complex in Rous chicken sarcoma. Caputo and Marcante, 1010

Encephalomyocarditis virus, effect on viability measurements of Ehrlich ascites cells. Eaton, Scala, and Jewell, 945

Endocrine factors, relation to carcinogenesis, review. Furth, 244
Endocrine tumors, transplantation of, in cancer research, review. Klein, 343

Enzyme inhibitors, distribution and metabolism of polyxenylphosphate in tumor-bearing mice. Muellebaecher, Straum-fjord, Hummel, and Regelson, 907

Enzymes, activity of carbamyl phosphate-aspartate transcarbamylase in tumors. Calva, Lowenstein, and Cohen, 101

—, activity of pyridine nucleotide-cytochrome c reductase, cytochrome oxidase, and diaphorase in epidermis during malignant transformation. Carruthers, Woernley, Baumber, and Thorell, 1025

—, carbamyl phosphate-aspartate transcarbamylase activity in regenerating rat liver. Calva and Cohen, 679

—, catalase and aldolase in layers of regenerating and tumor-bearing Triticus viridecerina. Rothbard, 909

—, deoxyribonuclease activity in virus-induced leukemic cells. Brody, Johannsson, and Thorell, 1025

—, deoxyribonuclease and DNA synthesis in nonmalignant growth. Brody and Bals, 526

—, depression of liver catalase by various agents in mice. Riley, 385

—, distribution of, in fractions of Ehrlich ascites and liver cells from glycogen homogenates. Carruthers, Woernley, Baumber, and Davis, 59

—, dopa oxidase activity in amelanotic melanoma tissue. Comstock, Wynne, and Russell, 890

—, fructose-1,6-diphosphatase and lactic dehydrogenase activity of hepatoma and normal tissues. Weber and Cantero, 763

—, histological distribution of arginine in solid and ascites mouse tumors and normal tissues. Malgren and Sylven, 625

—, lactic dehydrogenase as measure of growth of cell lines in diffusion chambers in vivo, in mice. Gabourel and Fox, 1210

—, leakage from ascites tumor cells. Wu, 1217

—, ribonuclease activity in protein-depleted and tumor-bearing rats. Zigman and Allison, 1105

—, reduction of body catalase activity by 3-amino-1,2,4-triazole. Feinstein and Dainko, 612

—, ribonuclease activity in protein-depleted and tumor-bearing rats. Zigman and Allison, 1105

—, serum lactic dehydrogenase activity after excision of transplanted tumors. Hsieh, Mao, and Sasamandour, 700

—, succinic dehydrogenase and cytochrome oxidase in lesions of large intestine, in human. Wattenberg, 1119

—, system in mouse leukemic cells, for biosynthesis of DNA. Mantasvino and Canellakis, 159

—, xanthine oxidase and uricase in leukemic and normal mouse leukoytes. Fiegelson, Ulltman, Harris, and Dushman, 1380

Eosin, exclusion of, as method of measuring viability of Ehrlich ascites cells. Eaton, Scala, and Jewell, 945

Ependymoma, induced by methylcholanthrene, DNA content of, Ogawa, Himes, Pollister, and Zimmerman, 596

Epidermal cells, surface ultrastructures of, normal and tumorous. Berwick, 589

Epidermis, during various stages of malignant transformation, and enzyme activity. Carruthers, Woernley, Baumber, and Davis, 580

Epiphyseal cartilage, growth hormone-induced growth of, inhibited by 5-flouroacil. Paschkis, Bartuska, Zagerman, Goddard, and Cantarow, 1196

Epoxides, and anticancer activity, review. Montgomery, 447

Epoxypiperazine, clinical use in treatment of lymphomas and other neoplasias. Miller, Diamond, and Craver, 1204

Escherichia coli, azaserine-induced inhibition of, reversed by phenylalanine and tryptophan. Tomisek, Reid, and Skipper, 490

Estradiol, failure to induce thyroid cancer in the rat. Field, McCammon, Valentine, Bernick, Orr, and Starr, 870

—, lack of effect on development of biliary neoplasias by methylcholanthrene pellets. Bain, Allen, Silvermann, and Kowalewski, 89

—, Cl4-labeled, synthesized from labeled testosterone by mouse ovaries in vitro. Hollander and Hollander, 290

Estrone, effect of pretreatment with, on growth of ascites tumors in mice. Goldie, Walker, Chambers, and Roberts, 98

—, effect on growth of transplanted intracranial adrenal cortical tumor. Browning, White, and Sadler, 519

—, in induction of mammary tumors of the rat, review. Noble and Cutts, 1125

—, in vitro synthesis of, by ovaries of high and low mammary tumor strains of mice. Hollander and Hollander, 290

Ethylene, alone or with progesterone and somatotropin, lack of effect on mammary tissues in vitro. Elia and Rivers, 505

Ethionine, effect on glycine retention by Ehrlich ascites cells. Johnstone and Schofield, 1140

5-Ethyl cysteine, effect on glycine retention by Ehrlich ascites cells. Johnstone and Schofield, 1140

Ethyleneimines, and anticancer activity, review. Montgomery, 447

Ethylene phosphoramides, structure and carcinostatic activity of. Crossley, Allison, and Seeger, 142

0-Ethyl homoserine, effect on glycine retention by Ehrlich ascites cells. Johnstone and Schofield, 1140

Etiology, of human liver cancer, at Dakar, French West Africa. Steiner, Camain, and Netik, 567

Extracts, cell-free, of leukemic tissue, in production of leukemia and various tumors in mice. Kassel and Rottingo, 155

Exudates, inflammatory, carcogenc Protestant-like effect of. Menkin, 544

Fat pads, of mice, with transplanted mammary nodules, in development of mammary tumors. Deome, Faulkin, Bern, and Blair, 515

Fatty acids, of adipose tissue, in vitro incorporation of acetate-14C into, in normal and tumor-bearing rats. Trew and Begg, 1014

Fetus, growth of, inhibited by 5-flourouracil, in rat. Paschkis, Bartuska, Zagerman, Goddard, and Cantarow, 1196

Flexner-Jobling carcinoma, destructive effect of mitomycin C on. Sugura, 538

—, synthesis of hexosamine in homogenates of. Kiser and Mc Coy, 307

Fluoracacetate, activation of, by neoplastic and normal pituitary tissue. Gaul and Villee, 726

5-Fluorocytidine, effect on various transplanted mouse leukemias. Burchenal, Holmberg, Fox, Hempfill, and Reppert, 194

—, growth inhibition of human tumor cell strain by, reversed by thymidine. Eidinoff, Rich, and Perez, 638

5-Fluorodeoxyctydine, effect on various transplanted mouse leukemias. Burchenal, Holmberg, Fox, Hempfill, and Reppert, 494

—, growth inhibition of human tumor cell strain by, reversed by thymidine. Eidinoff, Rich, and Perez, 638

5-Fluorodeoxyuridine, effect on various transplanted mouse leukemias. Burchenal, Holmberg, Fox, Hempfill, and Reppert, 494

—, growth inhibition of H.Ep. #1 cells in tissue culture by, reversed by thymidine. Eidinoff and Rich, 521

—, inhibition of bone marrow regeneration by, after irradiation and marrow transplantation. Hollingsworth, 165

9 a-Fluorohydrocortisone, effect on H.Ep. #8 transplants in Swiss mice. Merker and Woolley, 664

5-Fluorouracil, acid, effect on various transplanted mouse leukemias. Burchenal, Holmberg, Fox, Hempfill, and Reppert, 494

—, clinical study of. Gold, Hall, Shinler, Selawry, Colsky, Owens, Dederick, Holland, Brindley, and Jones, 355

—, cytochemical effects on Ehrlich ascites tumor cells. Lindner, 189
HeLa cells, interaction with normal cells in tissue culture. Leighton, Kalla, Kline, and Belkin, 23

---, in tissue culture cytotoxicity test for large-scale cancer chemotherapy screening. Toplin, 559

---, radiation response of, affected by actinomycin D. Bases, 1098

---, tumorigenicity of, in conditioned rats. McAllister and Correll, 1040

Hepatectomy, partial, and DNA synthesis, in rat. Brody and Balis, 338

---, partial, in rat, carbamyl phosphate-aspartate transcarbamylase activity in regenerating liver after. Calva and Cohen, 679

Hepatomas, rat, carbamyl phosphate-aspartate transcarbamylase activity in. Calva, Lowenstein, and Cohen, 101

---, in mice following 30-methylcholanthrene treatment. Klein, 1109

---, induced by 3'-methyl-4-dimethylaminoazobenzene, synthesis of hexosamine in homogenates of. Kizer and McCoy, 307

---, transammatosis of mouse, from spleen to liver in mice. Leduc, 1091

Hepatoma 134, ascites form, amino acid incorporation into proteins of, inhibited by glutamine analogs. Rabinovitz, Olson, and Greenberg, 338

---, 5-diazouracil tested against. Sassenrath, Kells, and Greenberg, 239

Hepatoma 9516, lack of methylglyoxal formation from glucose in. Lewis, Majane, and Weinhouse, 97

Hepatoma BC3, lack of metastasis of, from spleen to liver in mice. Leduc, 1091

Hepatoma Miller, See Miller hepatoma.

Hepatoma Novikoff. See Novikoff hepatoma.

Hepatoma SSS, metastasis of, from spleen to liver in mice. Leduc, 1091

Hepatoma, Zajdela ascites, low-temperature spectrographic study of cytochromes in. Monier, Zajdela, Chaix, and Petit, 927

Heptyl aldehyde, ineffective in breast cancer detection. Vogler and Powell, 507

Heterographs, a tissue-specific primary response to Sarcoma 37 in the chick embryo. Fraser, 38

Hexosamine, content during carcinogenesis by plastic films, in the rat. Danishefsky, Oppenheimer, Willhite, Stout, and Fishman, 1294

---, synthesis in tumor homogenates, in the rat. Kizer and McCoy, 307

Hexose, utilization of, by ascites tumor cells, in mice. Yushok, 317

Histamine, in vitro synthesis by neoplastic mast cells. Schidler, Day, and Fischer, 47

Histochernistry, of succinic dehydrogenase and cytochrome oxidase in lesions of large intestine in human. Wattenberg, 4118

Histocompatibility, strain-specific, of various cell types, unaffected by cold storage for 1-2 years. Hauschka, Mitchell, and Niederpruem, 548

Histones, of tumors in rat, chromatography of. Davis and Busch, 1137

---, uptake of amino acids into, in tumor-bearing rat. Busch, Davis, Honig, Anderson, Nair, and Nyhan, 1090

Hodgkin's disease, effect of epiperoxiperoxane in patients with. Miller, Diamond, and Craver, 1904

Homogenates, of various tissues, in depression of liver catalase activity. Leduc, 1091

Homoserine, effect on glycine retention by Ehrlich ascites cells. Johnson and Schofield, 1140

---, 0-ethyl. See 0-Ethyl Homoserine.

---, 0-methyl. See 0-Methyl Homoserine.

Hormones. See also specific hormones.
Leukemia—Continued

---, incorporation of formate-C\(^{14}\) into human leukocytes in. Wells and Winzler, 1086
---, induced by Friend virus, transplantable reticulum-cell sarcoma variant of. Buffet and Purth, 1063
---, in vitro incorporation of formate and glycine into leukocytes from patients with. Winzler, Wells, Shapira, Williams, Bornstein, Burr, and Best, 377
---, physicochemical characterization of DNA from leukocytes of patients with. Poll, Rosoff, di Mayoreva, and Cavaliere, 159
---, produced in rat with feeding of 2-acetylaminozolotropinethene. Hartmann, Miller, Miller, and Morris, 210
---, production of, with cell-free extracts in, mice. Kassel and Rottino, 155
---, radiation-induced in mice. Gross, Rosvit, Mada, Dreyfuss, and Moore, 316
---, virus-induced, growth activity of, in chicken. Brody, Johansson, and Thorell, 1065

Leukemia B88, effect of 5-fluorinated pyrimidine derivatives on. Burchenal, Holmberg, Fox, Hemphill, and Reppert, 494

Leukemia B8174, effect of 5-fluorinated pyrimidine derivatives on. Burchenal, Holmberg, Fox, Hemphill, and Reppert, 494

Leukemia C-1498, 5-diazouracil tested against. Sassenrath, Kells, and Golden, 259
---, ascites, lack of effect of glucagon on. Johnson and Wright, 557
---, effect of 5-fluorinated pyrimidine derivatives on. Peters, Holland, Bryant, Minnemeyer, Hohenstein, and Tieckelmann, 729
---, human, incorporation of formate-C\(^{14}\) into leukemic. Wells and Winzler, 1086
---, human, in vitro incorporation of formate and glycine by. Winzler, Wells, Shapira, Williams, Bornstein, Burr, and Best, 377
---, of normal and leukemic mice, xanthine oxidase and uricase levels in. Feigelson, Ultmann, Harris, and Dashman, 1091

Leukemia L1210, activity of Cytoxan, in mice. Venditti, Humphreys, and Goldin, 896
---, asciites, lack of effect of glucagon on. Johnson and Wright, 557
---, asciites, resistance without change in uptake of azaserine or DON. Jacquez and Hutchinson, 397
---, 5-diazouracil tested against. Sassenrath, Kells, and Greenberg, 259
---, effect of 5-fluorinated pyrimidine derivatives on. Burchenal, Holmberg, Fox, Hemphill, and Reppert, 494
---, effect of 5-fluorouracil on. Liebling, Humphreys, and Goldin, 116
---, effect of 2-methylthio-4-(substituted-anilino)-5-carboxoxy-pyrimidines on. Peters, Holland, Bryant, Minnemeyer, Hohenstein, and Tieckelmann, 729
---, effect of polyethylphosphate on, in mice. Muehlbaecher, Straumfeld, Hummel, and Regelos, 907
---, heterologous transplantation into rats. Erdmann, Asherson, and Sylvén, 925
---, in mouse, effect of pyridoxine deficiency on. Mihich, Rottino, Batchiler, and Moore, 316
---, in mouse, xanthine oxidase and uricase in leukocytes. Feigelson, Ultmann, Harris, and Dashman, 1244
---, mechanism of resistance to 8-azaguanine. Brockman, Bennett, Simpson, Wilson, Thomson, and Skipper, 856

Lipids, shifts in pregnancy, in rat. Binhammer, 970

Lipotechnics, serum, and carcinogenic hydrocarbons. Avigan, 831

Liver, carcinoogenicity of tannic acid on. Korpassy, 501
---, catalase in, decreased production of urea by, in rats. Burke and Miller, 622
---, metabolism of transplatable hepatomas from spleen to, in mice. Leduc, 1091
---, mouse, glycerol homogenates of, enzyme distribution in. Sanders, 856
---, in mouse, xanthine oxidase and uricase level in. Mihich, Rottino, Batchiler, and Moore, 316
---, mouse, histological distribution of arginase in. Malmgren and Sylvén, 925
---, mouse, purine synthesis in, in vivo. Stein, Murakami, and Visser, 84
---, normal and hepatomatous, carbamyl phosphate-aspartate transcarbamylase activity in. Calva, Lowenstein, and Cohen, 101
---, perfused, glutamine and glutamic acid metabolism in, in normal and azo dye-fed rat. Burke and Miller, 148
---, rat, electron microscopy of early effects of 3‘-Me-DAB on cells of. Porter and Bruni, 997
---, rat, fractionation of azo-peptides in trypptic digest of. Hughes, 472
---, rat, in vitro formation of protein-bound derivatives of aminoazobenzene-N\(^{1}\). Berenbom, 1045
---, rat, lack of effect of glutamine analogs on amino acid incorporation into proteins of. Rabinowitz, Olson, and Greenberg, 388

Leukemia L5178-Y, enzyme from mouse leukemic cells, and biosynthesis of DNA. Mantsavinos and Canellakis, 1239
---, in mouse, cell-free extracts of lymphoblasts, and biosynthesis of DNA. Mantsavinos and Canellakis, 1239
---, mechanism of resistance to 8-azaguanine. Brockman, Bennett, Simpson, Wilson, Thomson, and Skipper, 856

Leukemia P388, effect of 2-methylthio-4-(substituted-anilino)-5-carboxoxy-pyrimidines on. Peters, Holland, Bryant, Minnemeyer, Hohenstein, and Tieckelmann, 729

Leukemia P329, effect of 5-fluorinated pyrimidine derivatives on. Burchenal, Holmberg, Fox, Hemphill, and Reppert, 494

Leukemia P388, effect of 5-fluorinated pyrimidine derivatives on. Burchenal, Holmberg, Fox, Hemphill, and Reppert, 494

Leukemia P1081, see Chloroleukemia P1081.
Lymphatic system, retrograde spread of cancer in, in rabbit. Zeidman, 1114

Lymph node, inhibition of tumor growth in mice by sensitized, from rat. Castellanos, Ketchel, and Sturgis, 689

Lymphoblasts, of leukemia L5178, nutritional and amphoterin-resistant characteristics of. Fischer, 372

Lymphocytic leukemia P388. See Leukemia P388.

Lymphocytic leukemia P288. See Leukemia P288.

Lymphoma 6C3HED/DBA-2, tetraploid, metabolism and enzyme content of. Kit, Fiscus, Graham, and Gross, 0-01

Lymphoma 6C3HED/ DBA-2, ascites form, utilization of glutamine-C14 by, stimulated by O-carbamylserine. Rabinovitz, Olson, and Greenberg, 388

Lymphoma DBA/2, ascites tumor, in mice, effect of gluconolactone on growth of. Goranson, Cinits, and Hercz, 512

Lymphoma E515A, diploid, metabolism and enzyme content of. Kit, Fiscus, Graham, and Gross, 0-01

Lymphoma LL5147, diploid, metabolism and enzyme content of. Kit, Fiscus, Graham, and Gross, 0-01

Lymphomatisis virus, avian, in tissue culture, electron microscopy of. Davies and Sharpless, 233

Lymphosarcoma, human, effect of epiperoxipapperone on. Miller, Diamond, and Craver, 1204

Lymphosarcoma 6C3HED Gardner, ascites, in mice, utilization of host protein by. Henderson and LePage, 749

Lymphosarcoma 6C3HED, ascites form, utilization of glutamine-C14 by, stimulated by O-carbamylserine. Rabinovitz, Olson, and Greenberg, 388

Lymphoma, See also Leukemia.

Lymphoma, effect of hypothyroidism and thyroid grafts on, in irradiated mice. Nagareda and Kaplan, 292

Lymphoma 6C3HED/D BA-2, tetraploid, metabolism and enzyme content of. Kit, Fiscus, Graham, and Gross, 0-01

Lymphoma 6C3HED/D BA-2, ascites form, utilization of glutamine-C14 by, stimulated by O-carbamylserine. Rabinovitz, Olson, and Greenberg, 388

Lymphoma DBA/2, ascites tumor, in mice, effect of gluconolactone on growth of. Goranson, Cinits, and Hercz, 512

Lymphoma E515A, diploid, metabolism and enzyme content of. Kit, Fiscus, Graham, and Gross, 0-01

Lymphoma LL5147, diploid, metabolism and enzyme content of. Kit, Fiscus, Graham, and Gross, 0-01

Lymphomatosis virus, avian, in tissue culture, electron microscopy of. Davies and Sharpless, 233
Metastasis, effect of irradiation on, in mice. Oehl, Eck, and Smith, 957
—, effect of removal of primary tumor on development of, in mice. Ketcham, Wexler, and Mantel, 940
—, hematoxylin blue on distribution of, in rabbit and rat tumors. Mahaley and Knisely, 627
—, of transplantable hepatomas from spleen to liver in mice. Leduc, 1091
—, relation to lymph flow. Engeset, 277
—, retrograde spread in lymphatic system, in rabbits. Ziedman, 1114

Methionine analogs, effect on glycine retention by Ehrlich ascites cells. Johnstone and Schofield, 1140

Methionine sulfoximine, inhibition of amino acid incorporation into proteins of mouse ascites tumors by: Rabinovitz, Olson, and Greenberg, 388

3'-Methyl-4-aminobenzene, in vitro formation of protein-bound derivatives of, by rat liver. Gelboin, Miller, and Miller, 975

3(or 20)-Methylcholanthrene, and growth-promoting factor of inflammatory exudates, in development of neoplasia. Menkin, 544
—, failure to induce thyroid cancer in the rat. Field, McCammon, Valentine, Bernick, Orr, and Starr, 970
—, hepatomas induced by, necrosis and white blood cell changes. Sherman, 485
—, hepatomas in mice following treatment with. Klein, 1109
—, intracholecystic pellets of, induction of biliary carcinoma in hamsters by: Bain, Allen, Silberman, and Kowalewski, 98
—, in vivo administration of, effect on subsequent formation of protein-bound derivatives of aminoazo dyes by rat liver. Gelboin, Miller, and Miller, 975
—, mouse tumors induced by, effect of concentration of atmospheric oxygen on. DiPaolo and Moore, 1175
—, rhabdomyosarcomas induced by, transplantable in para-keet. Schlumberger and Zuck, 954

20-Methylcholanthrene-11-C14, incorporation into serum with lipoproteins. Avigan, 881

3'-Methyl-4-dimethylaminoazobenzene, electron microscopy of early effects of, on rat liver cells. Porter and Brunni, 997
—, urea production in perfused liver of rats fed. Burke and Miller, 622
—, glutamine and glutamic acid metabolism in perfused livers of rats fed. Burke and Miller, 148

Methylglyoxal, metabolism of, in tumors during glucose catabolism. Lewis, Majane, and Weinhouse, 97

D-1-Methyl-lysergic acid diethylamide, anti-tumor and sero-morph inhibition by. Peters, Holland, Bryant, Minnemeyer, Hohenstein, and Tieckelmann, 729

2-Methylthiouracil, in induction of thyroid cancer, in the rat. Field, McCammon, Valentine, Bernick, Orr, and Starr, 870

Microscopy, optical and electron, of rat and mouse tumors in study of cytochromes. Monier, Zapjeda, Chaix, and Pettit, 927
—, phase contrast, in isolation of nuclei from cells of Walker 256 carcinoma. Busch, Starbuck, and Davis, 684

Microsomes. See also Cell fractionation.
—, rat liver, in vitro formation of protein-bound derivatives of aminoazo dyes by. Gelboin, Miller, and Miller, 975

Microsome-supernatant fraction, of rat liver, N15 distribution in, after feeding of p-dimethylaminoazobenzene-N15. Berenbom, 1045

Miller hepatoma, localization of antibodies in anti-Murphy lymphosarcoma sera. Hiramoto, Yagi, and Pressman, 874

Mitochondria. See also Cell fractionation.
—, rat liver, in vitro formation of protein-bound derivatives of aminoazo dyes by. Gelboin, Miller, and Miller, 975
—, rat liver, N15 distribution in, after feeding of p-dimethylaminoazobenzene-N15. Berenbom, 1045

Mitomycin C, cytotoxic activity of, in tissue culture. Smith, Lunninis, and Grady, 847
—, effect on growth of mouse, rat, and hamster tumors. Sugiyra, 438
—, effect on H.Ep. #8 transplants in Swiss mice. Merker and Woolley, 664

Mitotic figures, in mouse liver, relation of agents that induce, to their effect on liver catalase. Riley, 295

Mitotic index, of H.Ep. #1 cells, effect of 5-fluoro-2'-deoxyuridine on, in tissue culture. Edinoff and Rich, 521

Mitotic rate, effect of 5-fluorouracil on. In rats. Pascheks, Bartuska, Zagerman, Goddard, and Cantarow, 1196

Miyono adenocarcinoma, effect of mitomycin C on growth of. Sugiyra, 438

Mucopolysaccharide activity, during carcinogenesis by plastic films, in the rat. Danishesky, Oppenheimer, Willbrite, Stout, and Fishman, 1294

Murphy-Sturm lymphosarcoma. See Lymphosarcoma Murphy-Sturm.

Muscle, mouse, histological distribution of arginase in. Malgren and Sylvén, 825

Muscle, rat, synthesis of, by. Lermo and Greenberg, 388

Muscle, Tactical distribution of arginase in. Malm and Greenberg, 388

Myleran-C14, distribution and fate of, in human. Nadkarni, Trams, and Smith, 713

Myleran-S35, distribution and fate of, in human. Nadkarni, Trams, and Smith, 713

Myleran, leukemia patients treated with, effect on DNA from leukocytes. Polli, Roseff, di Mayora, and Cavalieri, 159

Myleran-C14, distribution and fate of, in human. Nadkarni, Trams, and Smith, 713

Nelson mouse ascites tumor, riddish analysis of effects of carcinostatic chemicals on growth of. Tarnowski and Bross, 581

Neutralization, of mammary tumor agent, by antisera produced in heterologous hosts. Bittner, Hirsch, Ross, and Gabrielson, 130

Neutrons, in inducing neoplasms of endocrine organs. Harangher, Furth, Buffett, and Yokoro, 1181

Newcastle disease virus, effect on viability measurements of Ehrlich ascites cells. Eaton, Scala, and Jewell, 945

2-Nitrofluorene-9-C14, formation of 5-carbethoxy pyrimidine, in vitro. Skipper, Montgomery, Thomson, and Schabel, 493

2-Nitrofluorene-9-C14, incorporation into serum with lipoproteins. Avigan, 881

Nutation, activity against leukemia LI210 in mice. Venditti, Humphreys, and Goldin, 847

Nitromin, activity against leukemia LI210. In mice. Venditti, Humphreys, and Goldin, 847

Novikoff hepatoma, effect of glucagon on growth of. Goranson, Cinits, and Hercz, 512
—, formation of cytidine nucleotides and RNA cytosine by, in vitro. Kammen and Hurlbert, 554
—, fructose-1,6-diphosphatase and lactic dehydrogenase activities in. Weber and Cantero, 763
—, localization of antibodies in anti-Murphy lymphosarcoma sera. Hiramoto, Yagi, and Pressman, 874
—, synthesis of hexosamine in homogenates of. Kizer and McCoy, 307
Nuclei. See also Cell fractionation.
—, method for isolation of, from Walker 256 carcinoma.
Busch, Starbuck, and Davis, 684
—, of rat liver, N\textsuperscript{15} distribution in, after feeding of p-dimethyl-
ylaminoazoobenzene-N\textsuperscript{14}. Berenbom, 1045
Nucleic acids. See also Deoxyribonucleic acid and Ribonucleic acid.
—, antimitabolites involved in synthesis of, review. Montgomery, 447
—, catabolites of, inhibition of liver catalase by, Nuclei.
—, effect of 5-bromodeoxyuridine on precursor incorporation from orotic acid, by Novikoff tumor
Nucleosides, Nucleotide Nutrition, of tumors, Nucleotides.
Osgood's
Oximino acids, inhibition of growth and protein biosynthesis in Oxidative
Oxygen, Papilloma agent, bovine cutaneous, urinary bladder tumor in-
P-815 cells. Osgood's
Papilloma cells, Shope, surface ultrastructures of. Berwick, 853
Papillomatosis, canine oral, virus assay and stages of. Chambers and Evans, 1188
Parakeet, transplanted methylbolanthrene-induced rhabdo-
myosarcoma. Schlumberger and Zack, 954
Parotid tumors, production of, in mice, by inoculation of cell-
free filtrates of leukemic tissue. Kassel and Rottillo, 155
Pentosenucleic acid. See Ribonucleic acid.
Phenol, tumor-promoting action for mouse skin. Boutwell and Bosch, 413
Phenylalanine, anserine-inhibition of E. coli reversed by. Tomasek, Reid, and Skipper, 489
Philadelphia Zoological Garden, tumors in mammals and birds of. Lombard and Witte, 127
Phosphate-P\textsuperscript{32}, incorporation by Ehrlich ascites cells in vitro. Creaser, de Leon, and Scholdefeld, 705
Phospholipids, concentration of, in pregnancy, in rat. Bin-
hammer, 970
Phosphorus, uptake of, effect of leukemia virus on, in mouse spleen. Levy and Brodsky, 477
Pig kidney cells, growth measurements in culture with electron cell counter. Harris, 1029
Pitt 88, heterotransplantable human choriocarcinoma, effect of amethopterin on. Verney, Pierce, and Dixon, 603
Pitt 100, heterotransplantable human choriocarcinoma, growth of. Verney, Pierce, and Dixon, 683
Pituitary gland, experimental tumorigenesis of, review. Clifton, 2
—, isografts of, in induction of mammary cancer, in mice. Mihich, Rosen, and Nichol, 1244
—, neoplastic and normal, activation of fluorocetate by. Gaul and Vilell, 726
Pituitary hormones, effect on carcinogenesis in rats by 7,12-
dimethylbenzanthracene. Simpson and Evans, 1096
Pituitary tumors, adrenotropic, assay of, on corticoid-secreting adrenal tumors, Cohen and Furtth, 72
—, induced in mice by ionizing radiation. Furtth, Haran-
Ghera, Curtis, and Buffett, 550
—, prevented by thyroid grafts after radiothyroidectomy, in mice. Nagareda and Kaplan, 892
Plants, polysaccharides from, effect on ascites tumor cells. Belkin, Hardy, Perrault, and Sato, 1050
Plasma, human blood, normal or cancerous, effect on dopa oxidation. Monder and Waisman, 268
Plasma-cell tumor 70429, in mouse, effect of pyridoxine de-
iciency on. Milich, Rosen, and Nichol, 1244
Plastic films, biochemical changes during carcinogenesis by, in rat. Danishefsky, Oppenheimer, Willhite, Stout, and Fish-
man, 1234
Ploidy, metabolism and enzyme content of diploid and tetra-
plloid lymphomas and carcinomas. Kit, Fisch, Graham, and Gross, 201
Pluramycin, cytotoxic activity of, in tissue culture. Smith, Lummis, and Grady, 847
Polymer films, biochemical changes during carcinogenesis by, in rat. Danishefsky, Oppenheimer, Willhite, Stout, and Fish-
man, 1234
Polymers, anionic, distribution and metabolism of polyoxyn-
ephosphate, in mice. Muehlbaecher, Straunfjord, Hummel, and Regelson, 907
—, anionic, microelectrophoresis of ascites tumor cells and effect of polyoxypentaphosphate, Straunfjord and Hummel, 915
Polysaccharides, from higher plants, effect on ascites tumor cells. Belkin, Hardy, Perrault, and Sato, 1050
—, molecular properties of Roux chicken sarcoma hyaluronic acid-protein complex. Caputo and Marcante, 1010
—, temporal and reversal studies of yzmosan effect. Brandner and Clarke, 673
Poly styrene films, biochemical changes during carcinogenesis by, in rat. Danishefsky, Oppenheimer, Willhite, Stout, and Fish-
man, 1234
Polyoxynphosphate-P\textsuperscript{32}, distribution and metabolism of, in tumor-bearing mice. Muehlbaecher, Straunfjord, Hummel, and Regelson, 907
Polyxenylphosphate-P—Continued
---, microelectrophoresis of ascites tumor cells and effect of.
Strumfjord and Hummel, 913
Pregnancy, growth of fetus induced by 5-fluorouracil. Pasch-
kis, Bartuska, Zagerman, Goddard, and Cantarow, 1106
---, water and lipid shifts in, in rat. Bresnham, 979
Presidential address, evolution and nature of neoplasma.
Furth, 341
---, the cancer investigator. Stewart, 804
Progestosterone, alone or in estrone and somatotropin, lack of
effect on mammary tissues in vivo. Eliai and Rivera, 505
---, effect on growth of transplanted intrasural adrenal cortical
tumor. Browning, White, and Sadler, 819
Prolactin, in isografts of hypophyses in mice, in induction of
Pregnancy, 1114
Pyridine nucleotide-cytochrome c reductases, activity in epili-
yum during malignant transformation. Carruthers, Woerley,
Baumler, and Davis, 830
Pyridoxine, bases, inhibition of liver catalase by, in vivo and in
vivo. Hargreaves, Lebo, Leunie, and Hasson, 486
---, incorporation of nucleotides and nucleosides into Sar-
coma 180 and a human sarcoma grown in hamsters. Bennett,
Skinner, Smithers, and Hayes, 217
---, metabolism, by mutants of Streptococcus faecalis. Brock-
man, Sparks, Hutchison, and Skipper, 177
---, metabolism, reversal of asarinen-induced inhibition by
phenylalanine and tryptophan, in E. coli. Tomisiek, Reid,
and Skipper, 489
---, ribooside, effect on formate and glycine incorporation into
human leukocytes in vitro. Winzler, Wells, Shapira, Williams,
Bornstein, Burr, and Best, 377
---, synthesis, in Walker 256 carcinosarcoma, incorporation of
lysine. Davis and Busch, 1157
---, catalysis, of Walker carcino ma 256 and human skin epider-
ym in tissue culture. Jordan, Miller, and Peters, 195
---, depletion, ribonuclease activity in rats with. Zigman and
Allison, 1105
---, nutrition, of tumors. review. Henderson and LePage, 887
---, of human leukocytes, in vitro incorporation of formate and
glycine into. Winzler, Wells, Shapira, Williams, Born-
stein, Burr, and Best, 377
---, uptake of amino acids into nuclear, in the tumor-bearing
rat. Busch, Davis, Honig, Anderson, Nair, and Nyhan, 1080
---, utilization, by mouse ascites lymphosarcoma. Henderson
and LePage, 749
Pteroylglutamic acid, growth requirements of L5178 lympho-
blasts for. Fischer, 372
---, requirement of neoplastic mast cells in culture for.
Schindler, Day, and Fischer, 47
Purines, bases, inhibition of liver catalase by, in vivo and in
vivo. Hargreaves, Lebo, Leunie, and Hasson, 486
---, incorporation of nucleotides and nucleosides into Sar-
coma 180 and a human sarcoma grown in hamsters. Bennett,
Skinner, Smithers, and Hayes, 217
---, metabolism, by mutants of Streptococcus faecalis. Brock-
man, Sparks, Hutchison, and Skipper, 177
---, metabolism, reversal of asarinen-induced inhibition by
phenylalanine and tryptophan, in E. coli. Tomisiek, Reid,
and Skipper, 489
---, ribooside, effect on formate and glycine incorporation into
human leukocytes in vitro. Winzler, Wells, Shapira, Williams,
Bornstein, Burr, and Best, 377
---, synthesis, in solid Ehrlich ascites carcinoma and other
mouse tissues. Stein, Murakami, and Visser, 84
---, utilization of, from host, by transplanted tumors. Hen-
derson and LePage, 67
Pyridine nucleotide-cytochrome c reductases, activity in epili-
yum during malignant transformation. Carruthers, Woerley,
Baumler, and Davis, 830
Pyridoxine, deficiency of, effect on mouse and rat tumors.
Mihich, Rosen, and Nichol, 1444
---, deficiency of effect on mouse Sarcoma 180. Mihich and
Nichol, 1279
Pyrimidine derivatives, 5-fluorinated, effect on various trans-
planted mouse leukemias. Burchenal, Holmberg, Fox, Hemp-
hill, and Reppert, 494
Pyrimidines, effect of 5-bromodeoxyuridine on precursor incor-
poration into. Eidnoff, Knoll, Marano, and Klein, 789
---, fluorinated, inhibition of bone marrow regeneration by,
after irradiation and marrow transplantation. Hollingsworth,
165
Rabbits, effect of benzimidazole mustard on. Ulmton, Thomp-
son, Hirschberg, Zaidenweber, and Gelhorn, 719
---, effect of trypan blue on distribution of metastases and
transplants of VX2 tumor. Mahaley and Kinsely, 627
---, recticuloocytes, lack of effect of glutamine analogs on
amino acid incorporation into proteins of. Rabinovitz, Olson,
and Greenberg, 388
---, retrograde spread of V2 carcinoma in lymphatic system of.
Zeidman, 1114
---, surface ultrastructures of normal and tumorous epider-
mal cells of. Berwick, 853
Radiation. See also X-radiation and Irradiation.
---, effect on single cells of, and actinomycin D. Bases, 1223
---, gamma, leaf tumors induced by. Stein, Sparrow, and
Schairer, 746
---, in induction of leukemia in mice. Gross, Rosvit, Mada,
Dreyfuss, and Moore, 316
---, ionizing, pathogenesis of neoplasms of endocrine organs
by. Haran-Ghara, Purth, Buffett, and Yokoro, 1181
---, neutron and x-ray, in induction of pituitary tumors in
mice. Furth, Haran-Ghara, Curtis, and Buffett, 550
---, of mice, and thyroid effect on lymphoid tumor develop-
ment. Nagareda and Kaplan, 292
---, relation to carcinogenesis, review. Furth, 241
---, research, applications of tissue culture methods to. Bases,
311
Radioiodine, failure to induce thyroid cancer in the rat. Field,
McCrumon, Valentine, Bernick, Orr, and Starr, 570
Rana pipiens, effects of growth-inhibitors on tail blastema of.
Bieber and Hitchings, 112
Regeneration, of tadpole tail, effect of growth-inhibitors on.
Bieber and Hitchings, 112
Resistance, to 8-azaguanine, studied in Streptococcus faecalis
mutants. Brockman, Sparks, Hutchison, and Skipper, 177
---, to drugs, in cancer chemotherapy. Welch, 859
---, to heterografts, by chick embryo muscleorgan in culture
with Sarcoma 37 cells. Fraser, 33
Respiration, exclusion of, as method of measuring viability of
Ehrlich ascites cells. Eaton, Scalia, and Jewell, 945
Respiratory inhibitors, cytotoxic activity of, in tissue culture
assay. Smith, Lunnin, and Grady, 847
Reticulocytes, rabbit, lack of effect of glutamine analogs on
amino acid incorporation into proteins of. Rabinovitz, Olson,
and Greenberg, 388
---, inhibition of bone marrow regeneration by, inhibited by
0-
carbamylnserine. Rabinovitz, Olson, and Greenberg, 388
Reticulum-cell leukemia P329. See Leukemia P329.
Reticulum-cell sarcoma, human, effect of epoxypiperazine on.
Miller, Diamond, and Craver, 1294
Review, indirect induction mechanisms in carcinogenesis. Kap-
lan, 791
---, mammary tumors of the rat. Noble and Cutts, 1125
---, meeting of ways in cancer research, presidential address.
Furth, 241
---, nutrition of tumors. review. Henderson and LePage, 887
---, problems in experimental tumorigenesis of pituitary
gland, gonads, adrenal cortices, and mammary glands. Clif-
ton, 2
---, usefulness and limitations of tumor transplantation in
cancer research. Klein, 349
Rhabdomyosarcoma, induced by methylcholanthrene, DNA
content of. Ogawa, Himes, Pollister, and Zimmerman, 596
---, lack of methylglyoxal formation from glucose in. Lewis,
Majane, and Weinhouse, 97
---, serum lacte dehydrogenase activity after excision of, in
mouse. Hischi, Mnc, and Sasanouh, 700
---, transplantable methylcholanthrene-induced, in parakeet.
Schlumberger and Zack, 954
Rhabdomyosarcoma RMS (MC1A), mouse, transplantability
to pretreated rats. Piskovski and Schlesiner, 222
---, transplanted into rats, agglutinins in rat sera. Piskovski
and Schlesinger, 227
Ribbonuclease, activity of, in protein-depleted and tumor-bear-
ing rats. Zigman and Allison, 1105
Index to Volume 19

1271

Ribonucleic acid. See also Nucleic acids.
—, composition of, of normal and neoplastic mouse and chick tissues. Kleinschmidt, 966
—, conversion of exogenous guanine to guanine of, in human tumors. Balis, 297
—, cytosine formation from orotic acid, by Novikoff tumor in vitro. Kammen and Hurlbert, 654
—, synthesis of, and deoxyribonuclease in nonmalignant growth. Brody and Balis, 586
Ribose-5-phosphate, metabolism in ascites tumor cells in vitro. Wu, 1417

Ridgway osteogenic sarcoma, destructive effect of mitomycin C on. Sugiura, 488

Ridit analysis, of effects of carcinostatic chemicals on growth indices of mouse ascites tumor. Tarnowski and Bross, 581

Rous sarcoma, chicken, composition of nucleic acids of. Kleinschmidt, 966
—, chicken, molecular properties of hyaluronic acid-protein complex in. Caputo and Marcante, 1010
Rous sarcoma virus, tissue distribution during incubation period. Munroe and Southam, 308

SCH cell line. See Strain SCH cell line.

DL-Sarcosylin, activity against leukemia L1210, in mice. Venditti, Humphreys, and Goldin, 986

Sarcoma, transplantable reticulum-cell, variant of Friend's virus induced leukemia. Buffett and Furth, 1068

Sarcoma 37, ascites, effect of sex hormones on growth of. Goldie, Walker, Chambers, and Roberts, 28
—, solid and ascites, effect of polysaccharides from higher plants on. Belkin, Hardy, Perrault, and Sato, 1050
—, ascites and solid, lack of methylglyoxal formation from glucose in. Lewis, Majane, and Weinhouse, 97
—, histological distribution of arginase in. Malmgren and Sylven, 352
—, mouse, transplantability to pretreated rats. Pikovski and Schlesinger, 222

Sarcoma 180, ascites, amino acid incorporation into proteins of, inhibited by glutamine analogs. Rabinovitz, Olson, and Greenberg, 388
—, ascites, composition of nucleic acids of. Kleinschmidt, 966
—, ascites, destructive effect of mitomycin C on. Sugiura, 488
—, ascites, effect of sex hormones on growth of. Goldie, Walker, Chambers, and Roberts, 28
—, ascites, lack of effect of glucagon on. Johnson and Wright, 537
—, ascites, microelectrophoresis of, and effect of polyenyl-phosphophate. Straumfjord and Hummel, 918
—, ascites and solid forms, distribution and metabolism of polyenylphosphophate in, in mice. Muehlbaecher, Straumfjord, Hummel, and Regelson, 907
—, Crocker, 5-diazauracil tested against. Sassenkath, Kells, and Greenberg, 259
—, effect of pyridoxine deficiency on, in mouse. Mihich and Nichol, 279
—, effect of zymosan on, in low and high doses. Bradner and Clarke, 673
—, growth of cells in diffusion chambers in vivo, in mice. Galbreath and Fox, 1210
—, mechanism of resistance to 8-azaguanine. Brockman, Bennett, Simpson, Wilson, Thomson, and Skipper, 856
—, solid form, carcinostatic effect of glucagon, alone or with insulin, on, in mouse. Johnson and Wright, 537
—, utilization of host purines by transplanted, in mice. Henderson and LePage, 67
—, utilization of purine nucleosides and nucleotides by. Bennett, Skipper, Smithers, and Hayes, 317

Sarcoma B.P.8, effect of isonanobodies in vivo, on, in mice. Gorer and Kaliss, 824

Sarcoma I, lack of effect of isonanobodies in vivo on, in mice. Gorer and Kaliss, 824

Sarcoma R-14A, mouse, transplantability to pretreated rats. Pikovski and Schlesinger, 226

Sarcoma SBL1, mouse, transplantability to pretreated rats. Pikovski and Schlesinger, 226
—, transplanted into rats, agglutinins in rat sera. Pikovski and Schlesinger, 227

Sarkomycin, tested on various mouse, rat, and hamster tumors. Balls, 297

SCH tumors. Balls, 297

in vitro. Brody and Balls, 588

insulin, on, in mouse. Johnson and Wright, 557

Wu, 1217

growth. Brody and Balls, 588

insulin, on, in mouse. Johnson and Wright, 557

Wright, 557

and Kaliss, 824

nett, Skipper, Smithers, and Hayes, 817

Henderson and LePage, 67

Steroids. See also specific steroids.
—, sex, inhibition of growth of transplanted adrenal cortical tumor by. Browning, White, and Sudler, 819

Stibbestrol, intravaginal pellet of cholesterol and, in induction of cervical and vaginal cancer, in mice. Gardner, 170

Storage, of neoplastic and normal cell types, in frozen tissue bank. Hauschka, Mitchell, and Niederpruem, 643

Strain. See also under specific name, e.g., HeLa, Chang.
Strain L-fibroblasts, of various compounds, of azo dyes. Heller and Pullman, 618
---, of various compounds, review. Montgomery, 447
Streptococcus faecalis, metabolism of purines and 8-azapurines by mutants of. Brockman, Sparks, Hutchinson, and Skipper, 177
Streptovitacins A, B, C5, and D, tissue culture assay of, methodology and cytotoxicity. Smith, Lummis, and Grady, 847
Structure-activity relationships, chemotherapy, review. Montgomery, 447
---, of a series of purine analogs tested against experimental neoplasms. Skipper, Montgomery, Thomson, and Schabel, 425
---, of azo dyes. Heller and Pullman, 618
---, of various compounds, review. Montgomery, 447
Sucinyl dehydrogenase, in lesions of large intestine, in human. Wattenberg, 1118
Sulfate incorporation, during carcinogenesis by plastic films in the rat. Danishefsky, Öppenheimer, Willhute, and Fishman, 1234
Sulfonic acid esters, and anticancer activity, review. Montgomery, 447
Sulfur-35, distribution and tissue irradiation in patients with advanced chondrosarcomas. Gottschalk, Alpert, and Miller, 1078
---, in patients with advanced chondrosarcomas, clinical and hematologic observations. Gottschalk, Alpert, and Albert, 1070
Supernatant fraction. See Cell fractionation.
Supplements. See also Chemotherapy.
---, cancer chemotherapy screening data II. No. 3, Part 2, CS 1
---, cancer chemotherapy screening data III. No. 6, Part 2, CS 881
---, cancer chemotherapy screening data IV. No. 10, Part 2, CS 409
Symposium, on recent contributions of tissue culture to cancer research, pathogenesis of tumor invasion. Leighton, Kalla, Kline, and Belkin, 23
TAS ascites cells, utilization of host pigirnes by transplanted, in mice. Henderson and LePage, 67
TEM. See Triethyleneemamine.
TEPA. See Triethylene phosphoramide.
TPNH-cytochrome c reductase, activity in epidermis during malignant transformation. Carruthers, Woernley, Baumler, and Davis, 390
Tannic acid, hepatocarcinogenicity of. Korpasy, 501
Temperature, comparison of, over benign and malignant breast lesions. Vogler and Powell, 207
Testes, experimental tumorigenesis of, review. Clifton, 2
---, human chorocarcinomas, transplanted to hamster. Verney, Pierce, and Dixon, 683
---, intralymphatic injections into, in the rat, description of method. Engeert, 277
Testosterone, effect on growth of transplanted intraocular adrenal cortical tumor. Browning, White, and Sadler, 819
---, induction of growth of seminal vesicle by, inhibited by 3-fluorouracil. Paschikis, Bartuska, Zagerman, Goddard, and Cantarow, 1100
Testosterone C17-ethyl testosterone-4-C14, conversion to estradiol-17β in vitro by mouse ovaries. Hollander and Hollander, 290
Testosterone propionate, effect of pretreatment with, on growth of ascites tumors in mice. Goldie, Walker, Chambers, and Roberts, 28
Thermography, clinical evaluation in breast cancer detection. Vogler and Powell, 207
Thiocetamide, effect on rat liver regeneration. Kleinfield and von Haam, 769
8-Thioguanine, cytotoxic activity of, in tissue culture. Smith, Lummis, and Grady, 847
---, derivatives of, effect on growth of Adenocarcinoma 755 in vivo. Skipper, Montgomery, Thomson, and Schabel, 425
Thymidine, enzymatic phosphorylation of, in regenerating rat liver. Bollum and Potter, 561
---, growth inhibition of H.Ep. #1 cells by 5-fluoro-2'-deoxyuridine in tissue culture reversed by. Eddinoff and Rich, 521
---, reversal of growth inhibition of human tumor cell strain by fluoropyrimidines by. Eddinoff, Rich, and Perez, 638
Thymoma, induced by 2-nitrophenyl arsonate, low-temperature spectrographic study of cytochromes in. Monier, Zajdela, Chaix, and Petit, 927
Thyroid, effect on lymphoid tumor development in irradiated mice. Nagaresh and Kaplan, 893
---, failure of radioiodine to induce cancer, in the rat. Field, McCammon, Valentine, Bernick, Orr, and Starr, 870
---, tumors, induced by x-rays and neutrons. Haran-Ghara, Furth, Buffett, and Yokoro, 1181
Thyroxin, effect in reducing thyroid cancer induced by methylthioimidazole. Field, McCammon, Valentine, Bernick, Orr, and Starr, 870
---, effect on viability measurements of Ehrlich ascites cells. Eaton, Scala, and Jewell, 945
---, with growth hormone and hydrocortisone, effect on tumor growth in hypophysectomized rats. Simpson and Evans, 1096
Tissue bank, frozen, of neoplastic and normal cell types. Hauschka, Mitchell, and Niederpruem, 648
Tissue culture. See also Culture and Cell culture.
---, application to radiation research. Bases, 311
---, assay, cytotoxicity of antibiotics, chemicals, and solvents. Smith, Lummis, and Grady, 847
---, assay, methodology and cytotoxicity of anti-tumor agents. Smith, Lummis, and Grady, 847
---, avian lymphomas, virus propagated in, electron microscopy of. Davies and Sharpless, 293
---, cytotoxicity test for large-scale cancer chemotherapy screening. Toplin, 959
---, effect of actinomycin D on radiation response of HeLa cells. Bases, 1223
---, nutritional and amethopterin-resistant characteristics of leukemia clones. Fischer, 372
---, growth of chick fibroblast and pig kidney cells, growth measurements with electronic cell counter. Harris, 1020
---, of H.Ep. #1 cells, growth inhibited by fluoro-pyrimidines and reversed by thymidine. Eddinoff, Rich, and Perez, 638
---, of H.Ep. #1 cells, growth inhibition by 5-fluoro-2'-deoxyuridine reversed by thymidine. Eddinoff and Rich, 521
---, of Jensen sarcoma, amino acid requirements for growth of. McCoy, Maxwell, and Kruse, 393
---, nmunary tissue, effect of hormones on. Elias and Rivera, 505
---, nutritional and amethopterin-resistant characteristics of leukemia clones. Fischer, 372
---, of various cell lines, tumorigenicity of. McCAllister and Cortell, 1040
---, of Walker carcinosarcoma 256 cells, incorporation of canavanine into protein of. Kruse, White, Carter, and McCoy, 129
---, prolonged storage of cell strains in frozen tissue bank. Hauschka, Mitchell, and Niederpruem, 648
---, protein catabolism of Walker carcinosarcoma 256 and human skin epithelium in. Jordan, Miller, and Peters, 193
---, sponge-matrix technic, in study of tumor invasion. Leighton, Kalla, Kline, and Belkin, 23
Tissues, normal, in mouse and chicken, composition of nucleic acids of. Kleinschmidt, 966
Toxin, cancer, relation to extract of Walker carcinosarcoma 256. Kampenschmidt, Adams, and McCoy, 296
Viability of Ehrlich ascites cells, measured by respiration, dye exclusion, and tumor production. Eaton, Scala, and Jewell, 945

Virus, assay of, in canine oral papillomatosis. Chambers and Evans, 1188

—, avian lymphomatosis, in tissue culture, electron microscopy of. Davies and Sharpless, 238

—, effect on viability measurements of Ehrlich ascites cells. Eaton, Scala, and Jewell, 945

Friend, transplantable reticulum-cell sarcoma variant of leukemia induced by. Buffett and Furth, 1063

—, growth activity of leukemia induced by, in chicken. Brody, Johannison, and Thorell, 1025

—, leukemia, effect on phosphorus uptake by mouse spleen. Levy and Brodsky, 477

—, relation to carcinogenesis. Furth, 241

—, relation to mammary tumors of the rat. Noble and Cutts, 1185

—, Rous sarcoma, tissue distribution during incubation period. Munroe and Southam, 303

Vitamin analogs, cytotoxic activity of, in tissue culture assay. Smith, Lummis, and Grady, 847

Vitamins, effect of pyridoxine deficiency on mouse and rat tumors. Mihich, Rosen, and Nichol, 1244

— ——, effect of pyridoxine deficiency on mouse Sarcoma 180. Mihich and Nichol, 279

V2 epidermoid carcinoma cells, surface ultrastructures of. Berwick, 858

VX2 tumor, rabbit, effect of trypan blue on distribution of metastases and transplants of. Mahaley and Knisely, 627

Walker carcinosarcoma 256, canavanine incorporation into protein of cells of, in vitro. Kruse, White, Carter, and McCoy, 1293

— ——, destructive effect of mitomycin C on. Sugihara, 438

— ——, 5-diazouracil tested against. Sassenrath, Kells, and Greenberg, 235

— ——, effect of trypan blue on distribution of metastases and transplants of. Mahaley and Knisely, 627

— ——, extract of, as toxohormone. Kampschmidt, Adams, and McCoy, 336

— ——, growth of, inhibited by some ethylenephosphoramides. Crossley, Allison, and Seeger, 142

— ——, incorporation of lysine into nuclear proteins of. Davis and Busch, 1157

— ——, in vitro incorporation of acetate-1-C14 into adipose tissue of rats bearing. Trcw and Begg, 1014

— ——, isolation of nuclei from cells of. Busch, Starbuck, and Davis, 684

— ——, lack of effect of pyridoxine deficiency on. Mihich, Rosen, and Nichol, 1244

— ——, localization of antibodies in anti-Murphy lymphosarcoma sera. Hiramoto, Yagi, and Pressman, 874

— ——, protein catabolism of, in tissue culture. Jordan, Miller, and Peters, 195

— ——, ribonuclease activity in rats bearing. Zigman and Allison, 1103

— ——, solid form, carcinostatic effect of glucagon, alone or with insulin, on, in mouse. Johnson and Wright, 557

— ——, synthesis of hexosamine in homogenates of. Kizer and McCoy, 207

— ——, uptake of amino acids into nuclear proteins of, in the rat. Busch, Davis, Honig, Anderson, Nair, and Nyhan, 1301

Warburg's theory, relation to cancer, discussion. Furth, 241

Water, shifts in pregnancy, in rat. Binhammer, 970

White blood cell, relationship of tumor necrosis to changes in, in the hamster. Sherman, 485

Xanthine, inhibition of liver catalase by, in vivo and in vitro. Hargreaves, Lobo, Lemme, and Hasson, 468

Xanthine oxidase, in leukemic and normal mouse leukocytes. Feigelson, Ullman, Harris, and Dashman, 1239

Xanthomycin, cytotoxic activity of, in tissue culture. Smith, Lummis, and Grady, 847

X-rays, See also Irradiation and Radiation.

— ——, effect on mouse spleen after infection with Friend leukemia. Levy and Brodsky, 477

— ——, in inducing neoplasms of endocrine organs. Haran-Ghera, Furth, Buffett, and Yokoro, 1181

— ——, in induction of leukemia in mice. Gross, Roswit, Mada, Dreyfuss, and Moore, 316

— ——, whole-body, and 8-amino-1,2,4-triazole, effect on tumors in mice. Feinstein and Dainko, 612

Yoshida sarcoma, ascites, effect of polysaccharides from higher plants on. Belkin, Hardy, Perrault, and Sato, 1030

Zajdela ascites hepatoma, low-temperature spectrographic study of cytochromes in. Monier, Zajdela, Chaix, and Petit, 927

Zymosan, reversal studies of tumor inhibition by. Bradner and Clarke, 673