

FILE NAME: Chemical Abstracts (CHAB)

DATE: 1959

DOC#: CHAB042

OCUMENT DESCRIPTION: Abstract Originally Published in 1958 by Schmal

Med. J. Australia 1959-II, 105-13.—A lecture on pernicious anemia, Co, and vitamin B₁₂. Erich Hirschberg

Isoniazid and the organism. Experimental physiopathological research. Gennaro Di Macco (Univ. Rome). *Sci. Med. Ital.* (Eng. ed.) 7, 243-53(1958).—Studies on the capacity of isoniazid to change the reactivity of the organism to pathological stimuli indicate that, on the whole, the neurovegetative orientation tends to be predominantly cholinergic. Erich Hirschberg

Alterations in liver nucleic acids in rats during carcinogenesis with 4-dimethylaminoazobenzene. A. Khadzhirov (Med. Fac., Sofia, Bulgaria). *Z. Krebsforsch.* 62, 361-9 (1958).—Histochem. and biochem. detns. indicate that during the first 45-50 days of carcinogenesis hepatic ribonucleic acid (RNA) decreases while deoxyribonucleic acid (DNA) increases. RNA disappears from dying hepatic cells and is low in rapidly growing cholangioepithelial cells. At a later period (95-100 days), the content of RNA begins to increase, together with the amt. of DNA. Hepatomas and cholangiomas are characterized by a high level of RNA and DNA. Erich Hirschberg

Glycogen content in carcinomas of the oral cavity. Erhard Fasske and Konrad Morgenroth (Städt. Krankenhaus, Essen, Ger.). *Z. Krebsforsch.* 62, 375-82(1958).—Histochem. measurements indicate that a larger percent of oral malignant carcinomas than of carcinomas of the portio uteri contain glycogen. Detns. in normal oral mucosa are also presented. Glycogen content does not depend on the level of circulating insulin. Erich Hirschberg

Anticancer experiments. H. Okamoto, S. Koshimura, R. Hirata, K. Murasawa, Y. Bando, and R. Shimizu (Univ. Kanzawa). *Z. Krebsforsch.* 62, 408-18(1958)(in English).—Living hemolytic streptococci inhibit the growth of the Ehrlich ascites carcinoma and the Yoshida ascites sarcoma, presumably by forming streptolysin S at the expense of tumor ribonucleic acid. Other microorganisms (e.g. *Streptococcus faecalis*, *Staphylococcus aureus*, *Diplococcus pneumoniae*, *Escherichia coli*, *Neisseria gonorrhoeae*) do not have these effects. The Yoshida tumor is inhibited by nitroimin and by 6-(2-hydroxy-3,5-dibromophenylazo)-4-hexylresorcinol (I), but not by 6-hydroxybenzylidenes, 5 phenoxazones, 11 quinones, and 24 miscellaneous compds. tested in these expts. Inhibition of the Ehrlich tumor by I was more striking than that by mitomycin, carzinophilin, actinomycin J, 6-mercaptopurine, triethylenethiophosphoramide, or 1,6-bis(2-chloroethylamino)-1,6-deoxy-D-mannitol. I also inhibited the ascitic form of sarcoma 180. E. Hirschberg

Energy reactions inducing anoxygenic synthesis demonstrable in human tumors. F. Windisch (Deut. Akad. Wiss., Berlin), W. Nordheim, and W. Heumann. *Z. Krebsforsch.* 62, 423-33(1958).—Decoctions of various human cancer tissues may cause a marked generative effect on anabiotic fermenting yeast cells, but have no influence on the growth of respiring cells. Erich Hirschberg

Chemically defined substances, identical in action with materials present in cancer, endowed with an anoxygenic energy-liberating potential. F. Windisch, U. Gerhardt, W. Nordheim, W. Heumann, and H. Kerner (Deut. Akad. Wiss., Berlin). *Z. Krebsforsch.* 62, 568-84(1958).—A microbiol. test with *Saccharomyces carlsbergensis* strain U (preceding abstr.) is used to det. the ability of various materials to cause cell multiplication under strictly anaerobic conditions. The test is pos. with a series of plant and animal oils and lipide-contg. materials, e.g. sunflower oil, butter, and egg yolk (but not with liquid paraffin); with crude and purified lecithin (but not with lysolecithin); with crude cephalin and some of its fractions; with oleic, linoleic, linolenic, arachidonic, and clupanodonic acids (but not with petroselinic or erucic acids). DL-6,8-Dimercapto-octanoic acid is inactive at noncytostatic concns. Diprophosphorylpyridine nucleotide is inactive under these anaerobic conditions but active with aerobiosis. 63 references. Erich Hirschberg

A new procedure for cancer diagnosis. The agar-binding reaction. G. Csaba and I. Toro (Med. Univ., Budapest, Hung.). *Z. Krebsforsch.* 62, 481-94(1958).—A pos. reaction consists in the appearance of turbidity when the serum of cancer patients is added to agar under defined conditions. The reaction was pos. in 86% of 375 histologically proven carcinomas, in 13% of 528 patients with a wide variety of other diseases, and in 7% of normal subjects. In expts. dealing with the theoretical basis of this reaction, heparin, galactose, glucose, and fructose inhibited the formation of

turbidity with cancer serums. It is postulated that rapidly growing tumor cells attack the hyaluronic acid-heparin barrier built up against them in the organism, liberating mucopolysaccharides demonstrable in the circulation by the agar-binding reaction. Erich Hirschberg

Influence of dehydroascorbic acid on tumor metabolism. E. Heise, W. Lührs, and O. Neunhoeffer (Deut. Akad. Wiss., Berlin). *Z. Krebsforsch.* 62, 509-15(1958).—Dehydroascorbic acid (I) reduces anaerobic glycolysis, proportionately to its concn., by 34-68%; aerobic glycolysis is reduced 24% and respiration increases by 42%. I is not toxic up to 500 mg./kg. administered to rats. At 2 mg./kg., intravenous injections of I retarded the growth of Jensen sarcoma and Walker carcinosarcoma 256 in rats and of the Ehrlich ascites tumor in mice. Higher doses of I were not more effective. Erich Hirschberg

Influence of zymosan on experimental animal tumor growth. W. Lührs, E. Heise, and H. Berndt (Deut. Akad. Wiss., Berlin). *Z. Krebsforsch.* 62, 516-18(1958).—The intravenous injection of 20 mg./kg. zymosan into rats bearing the Jensen sarcoma or the Walker carcinosarcoma 256 retards tumor growth, presumably by influencing the level of properdin. Erich Hirschberg

Uptake of methionine-S³⁵ by the mitochondria of neoplastic cells. G. Giudice and V. Mutolo (Cancer Research Center, Palermo, Italy). *Z. Krebsforsch.* 62, 548-51(1958) (in English).—DL-Methionine-S³⁵ was injected into normal mice and mice bearing the Ehrlich ascites tumor. Normal liver cells and ascites tumor cells were fractionated, and the sp. activities of the fractions were studied. Tumor mitochondria took up the labeled methionine at a lower rate than those of normal liver cells. After 3 hrs., the trichloroacetic acid-sol. fraction was more active in the tumor cells than in the normal cells. These differences were not found when the labeled methionine was administered *in vitro* to cultures of normal or malignant cells. Erich Hirschberg

Influence of adrenochrome on tumor cell metabolism. E. Heise, W. Lührs, and O. Neunhoeffer (Deut. Akad. Wiss., Berlin). *Z. Krebsforsch.* 62, 555-60(1958).—Adrenochrome increases the respiration of cells of Jensen sarcoma or Walker carcinosarcoma 256 to double the normal amt. but does not influence aerobic and anaerobic glycolysis when added at a level of 0.3 ml. of a 0.01M soln. Adrenochrome has no effect on the growth of Jensen sarcoma in rats. Adrenaline probably can be oxidized to adrenochrome by means of dehydroascorbic acid. Erich Hirschberg

Carcinogenic effect of asbestos implanted into rats. Dietrich Schmähl (Univ. Bonn, Ger.). *Z. Krebsforsch.* 62, 561-7(1958).—Asbestos fibers and small fragments were applied subcutaneously and intraperitoneally in 39 rats. Of the 30 rats which survived 15 months, 11 developed sarcomas at the site of implantation. Erich Hirschberg

Reactions of lymphoid tissue to stimulation by antigen. Albert H. Coons (Harvard Med. School, Boston, Mass.). *Harvey Lectures* 53, 113-29(1959); cf. *C.A.* 49, 15011h, 15012a.—A review. Julia O. Holmes

Significance of serum Fe determination in diagnosis of hepatobiliary diseases. Chin-Yuan Kuo, K'uo-Huan Liang, Sun-Yi Wang, and Hsiang-Sheng Huang. *Chung Hua Nei K'o Tsa Chih* 6, 340-5(1958).—Serum Fe was detd. by the α, α' -dipyridyl method of Bothwell and Mallet (*C.A.* 49, 9720e), with slight modification. The color developed was read against a series of Fe standards in a Klett photoelectric colorimeter. Among 20 normal subjects the av. serum Fe value was 118 γ %, 135.5 γ % for 10 males and 100.5 γ % for 10 females. In 27 cases of acute hepatitis the av. serum Fe value was clearly above normal: 225.1 γ %. There was no definite correlation between serum Fe and bilirubin in the different disease stages of hepatitis examd. In 5 cases of chronic hepatitis the av. serum Fe value increased to 218.4 γ %. In cirrhosis of the liver, the serum content of Fe was normal: the av. for 32 cases was 115 γ %. In obstructive jaundice serum Fe value was either equal to or below normal. The av. of 11 cases with gall stone was 96.9 γ %, significantly different from that of acute hepatitis. In neoplastic liver diseases the serum Fe value was lower than normal while in cases of hepatic necrosis, inflammations of the gall bladder and bile duct the serum Fe values were within the normal range. Microcytic anemia, acute infectious hepatitis, and malignant liver tumor showed lower than normal serum Fe. These clinical studies showed that detn. of serum Fe was an effective method in testing