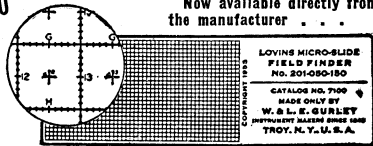


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BIOCHEMISTRY

Study Proteins in "Chain of Life" Mitosis

► THE DELICATE "mitotic apparatus" found in dividing cells has been isolated from sea urchin eggs and is currently being studied in an attempt to learn more about its production and reproduction in the "chain of life."

(The process by which a cell divides to form new cells is called mitosis. By means of mitosis "daughter" cells receive nuclear material identical with the "mother" cell.)

Already scientists have found that 10% of all the protein in the cells goes into the complete mitotic apparatus, abbreviated MA, Dr. Daniel Mazia of the University of California reported to the National Academy of Sciences meeting in Berkeley, Calif. Further tests point to the presence of ribonucleic acid and indicate that MA is made up mostly of only one species of protein. The major protein component has an average molecular weight of about 315,000.

Isolated MA remained stable only in the presence of a sulfur-containing compound dithiodiglycol, Dr. Mazia said. This is believed to be important proof that sulfur-sulfur bonds play a decisive role in the formation of the mitotic apparatus. Finding that excess mercaptoethanol penetrated the cell wall and blocked mitosis was additional evidence of the importance of sulfur bonds, Dr. Mazia said.

However, he pointed out, the block could be reversed and the mitotic divisions resumed as under normal conditions.

On the basis of these and other studies, Dr. Mazia explained, it appears that the proteins found in the mitotic apparatus are already formed before the cell divides and then are assembled at division. Even when the MA cannot function, he said, its reproduction continues as though conditions were normal.

Science News Letter, November 22, 1958

MEDICINE

Volunteers Show Vaccine Can Prevent Colds

► THE COMMON COLD can be prevented, a British scientist reported to the sixth annual Symposium on Antibiotics meeting in Washington, D. C.

Weekly injections of a vaccine prepared from the volunteer's own nose and throat bacteria significantly reduced the number of colds, Dr. J. Morrison Ritchie, director of the Public Health Laboratory, Birkenhead, England, reported. The number of colds in those not receiving the vaccine was five times that in the vaccinated.

Further tests, in which volunteers were given antibiotic tablets or lozenges in order to prevent colds, met with similar success. Only four in 100 of those receiving the antibiotic developed all the manifestations of the complicated cold, Dr. Ritchie said, as compared to 26 out of 100 of the control volunteers.

He reports oxytetracycline was the antibiotic used in the lozenge form. Sensitivity tests had showed the tetracyclines as a

group were the most suitable for this purpose.

During the winter of 1957-58, 1,120 volunteers were tested with the cold-prevention treatment. Only 6.2 per 100 of those on the antibiotic developed significant symptoms. Severe "nasopharyngitis," or inflammation of the pharynx above the soft palate, developed in 22.7 per 100 of those in the control group.

The form of cold prevention, Dr. Ritchie said, did not give rise to an increased number of antibiotic-resistant strains. The economies effected by such control measures are obvious, he concludes.

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