

White Blood Cell Clue May Aid In Transplants

A California doctor may have discovered how the body recognizes bacterial invaders.

In a recent interview, Dr. Hlojan Kinostia, director of experimental pathology at the City of Hope Medical Center, Duarte, Calif., said he found the clue in his research with macrophages, a type of white cell found in the blood stream.

The find may have value in cancer and organ transplant research, the doctor feels.

"We have learned that macrophages trap and analyze disease-causing material invading the body, then send instructions to another type of white cells, the lymphocytes, to multiply and make antibodies specifically designed to destroy the invader," Kinostia says.

"WE NOW think it may be possible to precondition macrophages to help us in at least two ways. First, we might train them to recognize at least some types of cancer as foreign material, so that lymphocytes would make antibodies to destroy cancer cells. Second, we might also train macrophages not to react to transplanted organs such as hearts and kidneys; in other words, to inhibit the production of antibodies naturally, without the use of radiation or drugs."

Kinostia, credited with being among the first to show that some industrial materials cause cancer in animals, reported his macrophage work in technical papers recently.

"Science has wondered for a long time just how our bodies can produce disease-fighting antibodies against such a wide range of foreign materials, or antigens," he said.

"Various researchers have shown that antibodies, which neutralize invading germs, are produced by lymphocytes, but we did not know how lymphocytes were instructed to turn out specific antibodies against specific antigens."

"In tests with human blood cell cultures, using sheep red cells as the antigens, we have found the antigens first were recognized by macrophages, which trapped them and apparently analyzed their chemical composition."

"Using this information, the nucleus of the macrophage printed off copies of RNA (a

molecule of ribonucleic acid), which were carried to a lymphocyte. The lymphocyte, following the RNA blueprint, could make antibodies specifically designed to neutralize the invading sheep red cells. We as-

sume this macrophage-lymphocyte system reacts in a similar way to fight other antigens such as bacteria."

RNA is part of the living cell's process for producing

proteins. It normally is the messenger which DNA (deoxyribonucleic acid) makes and sends to protein factories in the body of the cell, telling them what kind of protein to make. In the macrophage, RNA has

a slightly different function. It directs production by lymphocytes of antibodies against those antigens which the macrophage has analyzed.

Kinostia believes that by testing macrophages against var-

ious elements in cancer cells he may be able to find some antigenic material which the macrophages will identify as foreign and thus set up antibody production to destroy the cancer cells.

He believes it also may be possible to trick the macrophages into ignoring transplant tissues, without lowering the body's immunity to other antigens at the same time.

Currently used immunity-

suppressing drugs destroy lymphocytes, halting production of many kinds of antibodies, thus leaving the patient vulnerable to many diseases while recovering from the transplant surgery.

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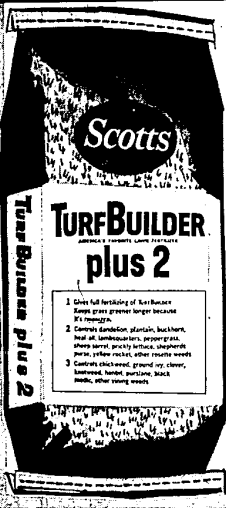
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Hettinger Appointed To Top Post

LANSING -- William Hettinger, 42, of Detroit, has been appointed Chief Assistant Secretary of State by Secretary of State James H. Hare.

Hettinger replaces Howard L. Jones who resigned to become a Democratic candidate for the Michigan House of Representatives from the 55th district of Lansing.

Hettinger has been president since 1963 of Stratton Associates, a municipal consulting firm based in Detroit, and has extensive background in municipal financial affairs.

A former township supervisor in Grand Traverse County, Hettinger also was executive secretary of the State Municipal Finance Commission in 1956-61, was a member of the Governor's Commission on Metropolitan Problems from 1957-59 and a member of the Superintendent of Public Instruction's Committee on School Financing in 1958-59.

Hettinger currently is a member of the Mayor's Committee on Voter Registration in Detroit and a member of the Metropolitan Stadium Committee, a group seeking to build a domed stadium in the metropolitan Detroit area with private funds.

Hettinger also is an associate member of the Municipal Finance Officers Association and of the Municipal Advisory Council of Michigan.

Hettinger resigned posts as a Secretary of State branch manager and area chairman of the Branch Managers Association upon his appointment as Chief Assistant Secretary of State.

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