

news THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT DALLAS

southwestern medical school - graduate school of biomedical sciences - school of allied health sciences

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******UT researcher studies "cancer genes"
and viruses.*

DALLAS--All cancer, Dr. Chil Yong Kang says, may well be caused by the expression of "cancer genes," genetic elements that change normal cells into cancer cells.

But where do the cancer genes come from? Are they inherited or are they created by genetic mutations?

In at least some cases it has been shown that the cancer genes are introduced into normal cells by certain viruses. But how they produce cancer in those cells is not well understood.

Dr. Kang, assistant professor of microbiology at The University of Texas Health Science Center at Dallas, in research supported by two grants from the National Cancer Institute, is attempting to answer these important, fundamental questions.

He is using birds -- chickens, pheasants, quails, turkeys and ducks -- and the cancer viruses to which they are susceptible, to study the origin of cancer genes.

"My work with these particular viruses started in Dr. Howard Temin's lab when I was his post-doctoral fellow," Dr. Kang says.

Dr. Temin was one of three veteran cancer researchers who won the 1975 Nobel Prize for Medicine for their discoveries concerning the interaction between cancer viruses and the genetic material of the cell.

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Kang worked with Temin for three years (1971-1974) at the University of Wisconsin. He came to the Dallas health science center in mid-1974.

Of his current research, he says, "It is a very basic question we are trying to answer -- what is the origin of the genes which change a normal cell into a cancer cell?"

"We can inoculate animals with chemical carcinogens and produce tumors. But we do not know how it works.

"There are two theories. Either the chemicals enhance the cell's genetic mutation rate or they activate a cancer gene that already exists in the cell. Our studies are to determine which hypothesis is correct."

Inoculating animals with certain viruses can also produce cancer, Dr. Kang says. But the role of viruses in cancer is complex and the question remains, "What is the crucial viral function which can turn a normal cell into a malignant cell?"

Dr. Kang says his studies are going well. "We are now in a position to isolate the cancer gene product. If we are successful, it would be a giant step forward."

"Once we have it isolated, we may be able to study its function. And once we understand how it functions, we should have some idea about how to prevent cancer."

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