New cancer study takes major step toward improved treatment

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Cancer researchers at the University of Oklahoma Health Sciences Center have found a way to turn ineffective new cancer drugs into cancer-fighters. By using their patented chemical compound, SHetA2, researchers tricked cancer cells into responding to new treatments and undergoing cell suicide. The research appears in the journal *Gynecologic Oncology*.

"This discovery means that we can use our non-toxic cancer prevention pill to improve treatment for people who already have cancer," said Doris Mangiaracina Benbrook, Ph.D., principal investigator on the project. "All studies to date have not found any side effects of taking our drug, giving hope that we can prevent cancer in healthy people, and improve treatment for cancer patients, without increasing toxicity."

The latest study looked at an upcoming class of cancer treatment drugs that worked well in experimental models, but proved ineffective against many human tumors. Dr. Benbrook and her team decided to test their compound's ability to "fix" the problem. It worked.

"The new chemotherapy drugs are antibodies that bind to cell surface receptors called 'Death Receptors.' The binding of the antibodies activates the death receptors in cancer cells and causes cell suicide with little harm to normal cells. Many cancers, however, are resistant to the antibodies," Benbrook said. "We've shown that SHetA2 treatment can make ovarian and kidney cancer cells sensitive to the death receptor antibodies and kill the cancer."

Benbrook said the compound will work with several cancers, including lung, kidney, ovarian, colon and pancreatic cancer.

"It would be a significant advancement in health care if we could avoid the severe toxicity and suffering that late stage cancer patients have to experience," Benbrook said.

The synthetic compound, SHetA2, a Flex-Het drug, was created by Benbrook with the help of chemist Darrell Berlin at Oklahoma State University. The compound directly targets abnormalities in cancer cell components without damaging normal cells. The disruption causes cancer cells to die and keeps tumors from forming.

Flex-Hets or flexible heteroarotinoids are synthetic compounds that can change certain parts of a cell and affect its growth. Benbrook and her research team have patented the SHetA2 Flex-Het and hope to start clinical trials for the compound within a year. If the compound continues to be found safe, it would be developed into a pill to be taken daily like a multi-vitamin to prevent cancer. This new discovery means that the pill also could be used to make patients, who already have cancer, better respond to treatment.

Source: University of Oklahoma