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$1 million grant could help put brakes on cancer

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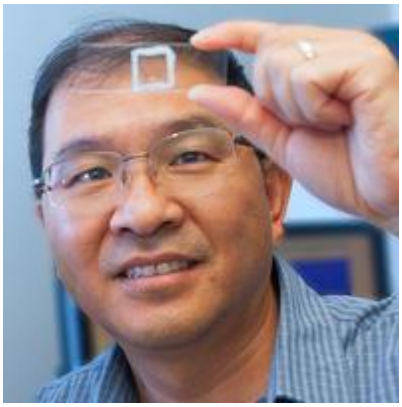

Yanchang Wang, associate professor in the College of Medicine's Department of Biomedical Sciences.

A Florida State University researcher's study of the mechanics of cell division may one day help put the brakes on cancer.

Yanchang Wang, associate professor in the College of Medicine's Department of Biomedical Sciences, received a four-year, $1 million grant from the National Institutes of Health to continue his ongoing study.

"This research," he said, "will potentially uncover new targets for cancer diagnosis and treatment."

To help nonscientists better understand his work, Wang compared it to the troubleshooting conducted by a car mechanic.

"The segregation of DNA into daughter cells during cell division requires the correct attachment of chromosomes by spindle microtubules," Wang said. "A surveillance mechanism, named the checkpoint, monitors the mistakes in this attachment process and delays cell division to allow mistake correction. The checkpoint is similar to the brake of a car, and loss of function of this 'brake' in a cell leads to chromosome missegregation, which directly contributes to cancer development."

Video: $1 million grant could help put brakes on cancer

Florida State University associate professor of cell biology Yanchang Wang is awarded a one million dollar grant from the National Institutes of Health to continue his research on cell division.

The specific question he's asking in this project is: After the mistakes in the attachment process have been corrected, exactly how is the brake released, thereby allowing cell division to

continue? Timing is everything, since a premature “brake release” also results in chromosome missegregation.

The completion of this NIH-sponsored project, Wang said, will provide the first detailed view of the process of checkpoint silencing or “brake releasing.”

Earlier this year, Wang’s paper exploring the protein Slk19’s impact on chromosome attachment was published in *Molecular Biology of the Cell*. One of his co-authors, Senior Associate Dean for Research and Graduate Programs Myra Hurt, explained what was at stake: “The most important thing that happens in terms of life on this planet is the 100 percent accurate duplication of the genome *and* the absolutely perfect segregation of those copies into two cells. The cell has lots of machinery to make sure that happens correctly.”