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Researchers find way to make cancer cells more mortal

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Washington State University researchers have discovered a way to help cancer cells age and die, creating a promising avenue for slowing and even stopping the growth of tumors.

"Hopefully, we can make cancer cells die like normal cells," says Weihang Chai, an assistant professor in the WSU School of Molecular Biosciences and WWAMI medical education program in Spokane. "Basically, you make the cancer cell go from immortal to mortal."

Normal cells lose a little bit of their DNA every time they reproduce as the molecule's strands lose part of their protective tips, called telomeres. Eventually, the telomeres become too short, signaling to the cell to stop replicating and growing.

But cancer cells have a mechanism to keep their DNA strands from shortening, giving them a near eternal life. This is because the enzyme telomerase extends one strand of the cancer cell's DNA while other proteins help extend the second strand.

Chai and her colleagues, writing in the current issue of The *EMBO Journal*, say they have found a regulatory protein that controls the production of that second strand. They have also found a protein required to synthesize it.

If that second strand of DNA cannot be lengthened, says Chai, it behaves like a normal cell and dies a normal death. She says her team will now

focus on developing a strategy to block the regulatory protein's function.

Provided by Washington State University