

Human DNA repair process recorded in action

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Rad51 takes a leading role in the action. Always on call in the cell, molecules of the protein assemble into a long

filament along a damaged or broken segment of DNA, where they help stretch out the coiled strands and align Stem cell transplant reverses them with corresponding segments on the cell's second copy of the chromosome, which serves as a template for reconstruction. Because this protein is regulated by a gene linked to increased risk of breast cancer, BRCA2, it is

also thought to play a role in suppression of that disease.

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With the ability to watch the assembly of individual filaments of Rad51 in real time, thowalczykowski's team made a number of discoveries. Among those are that, in contrast to their bacterial counterparts, Rad51 filaments don't grow indefinitely. This indicates that there is an as-yet undiscovered mechanism that regulates the prototol's pressure during pregnancy growth, Kowalczykowski said.

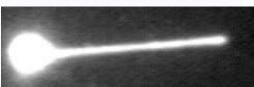
Another surprising difference between the human and bacterial processes, Kowålczykowski said, is that Rad51 doesn't fall away from the DNA when repair is complete. Instead, proteins that motor along DNA are reggired to dislodge it.

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face future of complications

"From a practical point of view, being able to record these single molecules gives wad resign information regarding the assembly process," the researcher said. "Now we're able to measure this in a quantifiably more meaningful way."

Source: University of California - Davis



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This filament composed of a fluorescently-labeled DNA molecule and the repair proteines flows from the filament composed of a fluorescently-labeled DNA molecule and the repair proteines from the filament composed of a fluorescently-labeled DNA molecule and the repair proteines from the filament composed of a fluorescently-labeled DNA molecule and the repair proteines from the filament composed of a fluorescently-labeled DNA molecule and the repair proteines from the filament composed of a fluorescently-labeled DNA molecule and the repair proteines from the filament composed of a fluorescently-labeled DNA molecule and the repair proteines from the filament composed of a fluorescently-labeled DNA molecule and the repair proteines from the filament composed of the brighter and longer as more and more Rad51 molecules assemble onto the DNA.

trap holding the DNA in place.

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