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Science retracts highly cited paper

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A highly cited 1997 [paper](#) on transcription-coupled repair was [retracted by Science](#) this week, after coauthor Steven Leadon, formerly of the University of North Carolina, was found guilty by a university committee of fabricating and falsifying data.

The research, which had been cited 227 times, reported evidence for one of the two prevalent hypotheses explaining the molecular correlates of Cockayne syndrome, a disorder that leads to death in early childhood.

The suggestion is that one of the underlying causes of Cockayne syndrome is the cell's inability to perform transcription-coupled repair of oxidative damage, according to first author [Priscilla Cooper](#) of the Lawrence Berkeley National Laboratory. The alternative hypothesis states that the proteins involved in transcription-coupled repair are also important for efficient basal transcription in the absence of any kind of DNA damage.

"There is some evidence on both sides of that question," said Cooper, "but data from my and other labs suggest that the main conclusions of the paper are probably correct. However, the field as a whole, and certainly my laboratory, has to go back and reinvestigate the whole issue."

This is [not the first time](#) that a paper by Leadon has been withdrawn from publication. In March 2003, [Leadon himself retracted](#) a 1998 *Mutation Research/DNA Repair* [paper](#), taking sole responsibility for what he called a "systemic error that could have influenced, if not accounted for," some of the findings. That month, Leadon resigned from his position as director of radiobiology at the University of North Carolina at Chapel Hill after an investigating committee found that a 1998 *Science* [paper](#)—also later [retracted](#)—had contained results that he had fabricated and falsified. Leadon appealed the committee's findings to the Office of Research Integrity (ORI) at the US Department of Health and Human Services.

It was Leadon who suggested retracting the 1998 *Science* paper, according to Katrina Kelner of *Science*. "Although he was appealing the committee's findings, he still felt that it was appropriate to retract it." Leadon could not be reached for comment for this article.

This week's retraction, which Leadon declined to sign, comes after the committee issued new charges against him, although they declined to offer specifics. According to a statement by University of North Carolina's Tony Waldrop, "[this] affirms that the scientific process works. Data are checked and rechecked so that the correct result will emerge."

Although ORI's [Kay Fields](#) said that her office could neither confirm nor deny the existence of an investigation of Leadon, she said the office has not found misconduct, which explains the absence of Leadon's name in the [Public Health Service Administrative Actions Listing](#), a Web site that [provides information on researchers' misconduct](#).

"It was a big surprise that Leadon's work turned out to include not only material that cannot be reproduced, but material that was evidently falsified," said [Philip Hanawalt](#) of Stanford University, who was not involved in the research. Hanawalt, in whose laboratory transcription-coupled DNA repair was discovered, still thinks that oxidative-based damage may well be subject to transcription-coupled repair.

That view was shared by [Jan Hoeijmakers](#) of the Erasmus Universiteit Rotterdam in the Netherlands. "Knowing the notoriously subtle nature of the technique used by Leadon, we were from the beginning somewhat skeptical about the significance of these specific findings," Hoeijmakers said in an E-mail. "We have concentrated on other strategies to investigate the biological importance of the transcription-coupled repair system. Ironically, although the evidence from Leadon is obviously false, our results support the idea that transcription-coupled repair is relevant for repairing transcription-blocking oxidative damage."

For Hanawalt, the most serious problem is the fallout that people coauthoring the paper may suffer in their scientific careers. "There is absolutely no indication that any of the other authors of the paper knew anything about this," he said.

The important thing now is for the field to understand what exactly the true situation is," said Cooper. "This has been a setback in our understanding, and also a very devastating experience."

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