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Fraud spurs *Cell* paper retraction

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A Columbia University researcher retracted a paper from the journal *Cell* last week due to fabricated data. Scientists said the fraud was more disturbing than damaging to the field of research on Wnt signaling, a major pathway in embryonic development and human cancer. Its impact on the scientists involved may be more serious.

"Although the data caused a stir, I think most people's view was that there was some interpretation problem early on, so it really hasn't dramatically changed most people's thinking," said [Xi He](#), of Children's Hospital Boston and Harvard Medical School. "I think it is a bump in the Wnt field, but it has not moved the field several years backwards."

[Gary Struhl](#) of the Howard Hughes Medical Institute (HHMI) and Columbia University in New York [retracted](#) the paper from *Cell* on February 6. The [paper](#), published in 2002, challenged the conventional theory on Wnt signaling.

Wnt protein is thought to bind to its receptor, setting off a signaling pathway in which beta-catenin (or Armadillo in the fruit fly) enters the nucleus and activates transcription factors. Struhl and postdoc Siu-Kwong Chan argued in the paper that Armadillo can be tethered to the membrane and transduce Wnt signals without entering the nucleus.

When Struhl recently attempted to replicate the experiments, which were largely conducted by Chan, he "personally obtained the opposite result for the key negative control for the experiments in Figure 5," he writes in the retraction. When confronted, Chan reported that some of the results were "either not performed or gave different results than presented in the paper," according to the retraction.

Struhl declined to elaborate further.

"The retraction says it all," he said in an E-mail message. "Columbia and HHMI have mandated protocols to investigate misconduct when it occurs. I contacted Columbia, HHMI, and Cell Press immediately upon discovering that crucial experiments in the paper had been fabricated." Columbia and HHMI are investigating the incident, Struhl said.

Chan, who was at Albert Einstein College of Medicine since November 2003, resigned from his position on January 21. He could not be reached for comment for this article.

The retraction coincides with a [paper](#) published February 10 in *Public Library of Science (PLOS) Biology*, in which Princeton University's Nicholas Tolwinski and Eric Wieschaus confirm that membrane-bound beta-catenin is unable to activate transcription. Their finding demonstrates that the Wnt pathway does depend on beta-catenin entering the nucleus.

His group spent "a year and a half trying to do experiments we would never have done had the Chan-Struhl paper not been out," Wieschaus told us.

"We had shown that they were wrong, we had given them the manuscript and given them the reagents and submitted our paper to *PloS*, and it was accepted," he said.

"It just came out February 10," Wieschaus said. "Because the *Cell* retraction came out on February 6th, our paper is like beating a dead horse."

The episode was "tragic" and "sad," Wieschaus said. "I think that Gary has done so many great experiments in his life," he said. "I think it's probably a lesson for him, and in a way, it's a lesson for all of us."

Xi He said the incident probably would not cause colleagues to doubt the quality of future work produced at Struhl's lab. "Gary has been doing really great work; I think it's a very unfortunate situation," he said. "My view on this is if someone intentionally wants to cheat, it can escape detection."

Chan's career, however, is another story. "If you have fabricated the data, I don't think anyone would dare to hire somebody like that," Xi He told us. "What's the point?"

But Mariann Bienz, from the Medical Research Council Laboratory of Molecular Biology in Cambridge, UK, thought the affair might cast a shadow on the senior author.

She noted in an E-mail interview that Struhl already had an earlier retraction about a [Nature paper](#) in 1996. "However, he then published an exoneration of that *Nature* paper, in *Nature* 1997, together with Chan! It's all the more remarkable since Struhl runs a small group, and has only published with 3 or 4 coauthors from his own lab in the last 7 years," she told us. "How can this happen twice?"

She added that a number of researchers strongly believed that Struhl's paper should never have been published in *Cell*, "since the science was not up to the normal *Cell* standard and since it warmed up an old story that had been buried convincingly some time ago."

"We believe that the reviewing process had failed in this case," she said. "A careful reviewer should have also spotted that one of the images was used twice (though rotated and cropped differently the second time) for two different constructs!" This went unnoticed originally, but had later been corrected by Chan and Struhl.

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