

CRISPR Science Prevails; Critics Proven 'Off-Target'



By Julianna LeMieux — March 29, 2018



Drop the mic [1]

New scientific discoveries should be held to a high standard. When they happen to be incredibly powerful and have the ability to edit the human genome, they should be held to the highest standard.

It was not surprising then, that a paper published last May in Nature Methods entitled "Unexpected mutation after CRISPR-Cas9 editing *in vivo*" which called into question the safety of CRISPR-Cas9 technology, was met with a collective gasp in the scientific community. It did not take long, however, for a heavy-handed response from people in that field to make their opinion about the paper known.

The people who have a stake in CRISPR for both academic and financial success were quick to point out the flaws in the research, by writing open letters on their company websites. In addition, Gaetan Burgio, MD, Ph.D., a scientist very familiar with CRISPR-Cas9, published [a lengthy and comprehensive essay](#) [2] on medium.com that spells out his criticism of the manuscript where he commented,

"I find absolutely astonishing this paper got published in Nature Methods. This is a terrible paper and as a reviewer I would have dismissed it from the first round of review. This is a worrying trend from 'high impact' journals to promote the hype over good science. The publication of this paper is clearly a failure in the peer review process."

At first glance, it was obvious that the paper was not comprehensive - consisting of only one figure

in the paper and four in the supplement.

Turns out, it also was wrong.

The authors of the original paper have now published a follow up in bioRxiv entitled, "[Corrigendum and follow-up: Whole genome sequencing of multiple CRISPR-edited mouse lines suggests no excess mutations](#) ^[3]" that is essentially a "do-over" of their original paper. In it, they contradict their own original results and admit that

"Taken together, these whole-genome-sequencing-level results support the idea that in specific cases, CRISPR-Cas9 editing can precisely edit the genome at the organismal level and may not introduce numerous, unintended, off-target mutations."

The way that this was done, with a team of researchers extending and correcting their own flawed data, is atypical, to say the least. However, whether a paper is retracted or a scientist decides to publish a do-over, one way or another, bad science corrects itself.

Source ^[4]: Schaefer KA, et al. Unexpected mutations after CRISPR–Cas9 editing *in vivo*. Nature Methods 14, 547–548 (2017) doi:10.1038/nmeth.4293 30 May 2017

COPYRIGHT © 1978-2016 BY THE AMERICAN COUNCIL ON SCIENCE AND HEALTH

Source URL: <https://www.acsh.org/news/2018/03/29/crispr-science-prevails-critics-proven-target-12773>

Links

[1] <https://pixabay.com/en/drop-the-mic-hand-side-2945055/>

[2] <https://medium.com/@GaetanBurgio/should-we-be-worried-about-crispr-cas9-off-target-effects-57dafaf0bd53>

[3] <https://www.biorxiv.org/content/early/2018/03/26/154450>

[4] <https://www.nature.com/nmeth/journal/v14/n6/full/nmeth.4293.html>