

By [Tom Johnston](#) on 12/5/2013

The publisher of *Food and Chemical Toxicology* has retracted a study by a French researcher that claimed feeding genetically modified corn to rats increased their risk of cancer because the study, upon further investigation, was deemed inconclusive. Elsevier published the study, titled “Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize,” by Gilles Eric Séralini and other researchers in November 2012.

However, after receiving letters to the editor expressing concerns about the validity of the findings, particularly given that only 20 animals were used in the study, the journal asked for Séralini’s data and conducted a lengthy investigation.

## **Elsevier Announces Article Retraction from Journal Food and Chemical Toxicology**

*“Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize,” by Gilles Eric Séralini et al. has been retracted by the journal Food and Chemical Toxicology*

**Cambridge, MA, November 28, 2013**

[Elsevier](#) announces that the article “Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize,” by Gilles Eric Séralini et al. has been retracted by the journal *Food and Chemical Toxicology*.

The journal has issued the following retraction statement:

The journal *Food and Chemical Toxicology* retracts the article “Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize,” which was published in this journal in November 2012. This retraction comes after a thorough and time-consuming analysis of the published article and the data it reports, along with an investigation into the peer-review behind the article. The Editor in-Chief deferred making any public statements regarding this article until this investigation was complete, and the authors were notified of the findings.

Very shortly after the publication of this article, the journal received Letters to the Editor expressing concerns about the validity of the findings it described, the proper use of animals, and even allegations of fraud. Many of these letters called upon the editors of the journal to retract the paper. According to the journal’s standard practice, these letters, as well as the letters in support of the findings, were published

along with a response from the authors.[1] Due to the nature of the concerns raised about this paper, the Editor-in-Chief examined all aspects of the peer review process and requested permission from the corresponding author to review the raw data.

The request to view raw data is not often made; however, it is in accordance with the journal's policy that authors of submitted manuscripts must be willing to provide the original data if so requested.[2] The corresponding author agreed and supplied all material that was requested by the Editor-in-Chief. The Editor-in-Chief wishes to acknowledge the co-operation of the corresponding author in this matter, and commends him for his commitment to the scientific process.

Unequivocally, the Editor-in-Chief found no evidence of fraud or intentional misrepresentation of the data. However, there is a legitimate cause for concern regarding both the number of animals in each study group and the particular strain selected. The low number of animals had been identified as a cause for concern during the initial review process, but the peer review decision ultimately weighed that the work still had merit despite this limitation. A more in-depth look at the raw data revealed that no definitive conclusions can be reached with this small sample size regarding the role of either NK603 or glyphosate in regards to overall mortality or tumor incidence. Given the known high incidence of tumors in the Sprague-Dawley rat, normal variability cannot be excluded as the cause of the higher mortality and incidence observed in the treated groups.

Ultimately, the results presented (while not incorrect) are inconclusive, and therefore do not reach the threshold of publication for Food and Chemical Toxicology. The peer review process is not perfect, but it does work. The journal is committed to getting the peer-review process right, and at times, expediency might be sacrificed for being as thorough as possible. The time-consuming nature is, at times, required in fairness to both the authors and readers. Likewise, the Letters to the Editor, both pro and con, serve as a post-publication peer-review. The back and forth between the readers and the author has a useful and valuable place in our scientific dialog.

The Editor-in-Chief again commends the corresponding author for his willingness and openness in participating in this dialog. The retraction is only on the inconclusiveness of this one paper. The journal's editorial policy will continue to review all manuscripts no matter how controversial they may be. The editorial board will continue to use this case as a reminder to be as diligent as possible in the peer review process.

[1] Please see *Food and Chemical Toxicology*, 53 (1), pp. 440-483, for all Letters to the Editor and the response.

[2] <http://www.elsevier.com/journals/food-and-chemical-toxicology/0278-6915/guide-for-authors#8101>

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