

## Gilles-Éric Séralini: Activist professor and face of anti-GMO industry

**Gilles-Éric Séralini** is a French scientist who has been a professor of molecular biology at the University of Caen since 1991. He is known for his controversial research concluding that [genetically modified food](#) and the pesticide glyphosate are unsafe for human consumption.

Séralini was born in 1960 in Annaba, Algeria, then known as Bône. He is president and chairman of the board of CRIIGEN (Committee of Independent Research and Information). He has published multiple studies alleging health risks associated with plant biotechnology which have been called flawed and biased by various regulatory and academic groups.

A professor of Molecular Biology at the University of Caen, Laboratory of Biochemistry and Molecular Biology, I.B.F.A., Esplanade de la Paix, 14032 Caen Cedex, France. Séralini studied in Nice and became a Doctor in biochemistry and molecular biology at the University of Montpellier in 1987. He left then for North America to carry out fundamental research for four years, at the University of Western Ontario and Laval University Medical Center, doing research on corticosteroid-binding globulin. Qualified to supervise research, he passed, at the age of 30, the French national competitive exam for University Professors.

[Séralini](#) chose to focus on the interface of cancer research and endocrinology at the University of Caen, where he was appointed professor in June 1991, a position he has held ever since. He has written about 100 scientific articles and conference papers for international specialist symposiums. He assumes several roles in the Commissions of the University of Caen, where he leads a research team associated to CNRS (French National Centre for Scientific Research) and INRA.”

## Research Funding

Funding for much of Séralini’s research has come directly from the alternative health and organic industries, and in particular by various organizations tied to the [Rodale Institute](#), a 501c3 that bills itself as “advocating for policies that support farmers, and educating consumers about how going organic is the healthiest option for people and the planet.” Anthony Rodale—chairman emeritus of Rodale’s Organic and grandson of the founder—is a vocal supporter of Séralini’s work.

The funds are funneled to the French scientist through the [Sustainable Food Alliance](#) (SFA), headed by Patrick Holden, former director of the [UK Soil Association](#)—Britain’s organic industry trade group—which is a “charity campaigning for planet-friendly organic practices” and “healthy, humane and sustainable food, farming and land use. A [study released in December 2016](#) claiming GM corn is not “substantially equivalent” to non-GMO varieties was financed by SFA. With branches in the US and overseas, SFA provides research funds to organic and anti-GMO groups around the world, including to scientists such as Séralini, without having to make the grants public. About US\$2 million appears to have gone from this NGO to research for “herbicide” and “toxic evaluations” between 2011-2013. Seralini’s research group acknowledged support from SFA in the PLOS ONE article. Séralini has previously received funding from Greenpeace, which financed a 2007 study that claimed that GM corn caused health problems in rats. The

study was reviewed by the European Food Safety Authority, which concluded that all of the statistical anomalies cited by the study group were attributable to “normal biological variation.”

Additional funding for much of Séralini’s research and to support his France-based laboratory comes from Sevene Pharma, a French company that promotes “cures” using homeopathy, which mainstream scientists including the [US Federal Trade Commission](#) consider pseudo-science. Sevene sells homeopathic remedies but also pays Séralini to research atrazine and glyphosate risks. It markets “detoxification” homeopathy products to treat the alleged toxic effects of glyphosate and atrazine “contamination”, which is the focus of Séralini’s research, a clear conflict of interest the professor has apparently been forced by PLOS to now acknowledge.

Séralini has been a long time consultant for Sevene. According to an article on the French professor (published in French [here](#), but translated and excerpted [here](#) by geneticist David Tribe), he also spends a significant part of his time promoting so-called detoxification products, for example at a training seminar organised by Corinne Lepage’s CRIIGEN, with lectures organized by Sevene and at symposiums on alternative medicine, some sponsored by Sevene. Séralini’s research team includes a former director from Sevene. A translation of the French article—“The “dark side” of Professor Séralini”—is available [here](#).

Other funders for his recent work include:

- CRIIGEN
- JMG Foundation (formerly the Goldsmith Foundation, led by ecology environmental activist Ben Goldsmith)
- Lea Nature, organic and natural products company
- Foundations Charles Léopold Mayer for the Progress of Humankind
- Nature Vivante, ecological trade association
- Malongo, fair trade, organic coffee company
- Denis Gouchard, natural living foundation
- The Sustainable Food Alliance, a non-profit organization run by Rodale Organic’s Anthony Rodale whose mission is “To educate the public about the positive health and environmental benefits of organic food and farming.”

## **Research at CRIIGEN (Committee of Independent Research and Information on Genetic Engineering**

[Unknown](#)

Under the auspices of CRIIGEN, Séralini has published multiple studies claiming health risks

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associated with GMOs and the glyphosate-based herbicide

Roundup on human cells and the enzyme aromatase in vitro,

as well as rat testicular cells. His in vitro research has concluded that Roundup (the formulation with adjuvants, not just glyphosate) is toxic to cells in a dish, as well as that it is an endocrine disruptor. In 2013, the Seralini lab published a study in the *Journal of Applied Toxicology* that examined the effects of Cry1ab and Cry1ac insecticidal Bt toxins, as well as their effects in conjunction with Roundup, on HEK cells

In his most controversial research, in 2012, Seralini et al published a study in the journal *Food and Chemical Toxicology* (Volume 50, Issue 11, November 2012, pages 4221-4231) titled “Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize”. It was subsequently retracted to huge international controversy. See Seralini Affair below.

Here is the [original abstract of the Food and Chemical Toxicology paper](#). Before its retraction, the study had major international repercussions, shaping media and social media public opinion. It informed the [banning](#) of genetically modified foods by the Kenyan government in November 2012[2].

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On November 28, 2013, however, the journal[3] retracted the article

due to [strong criticism](#) from the scientific community about the way the study was conducted. The editor, A. Wallace Hayes, wrote that he retracted the paper because it was “[inconclusive](#),” claiming that this was consistent with Committee on Publication Ethics (COPE) guidelines, although [others disagreed](#).

On June 24, 2014, the retracted study, in [expanded form](#) was republished with the title “Republished study: long-term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize” without peer review in an obscure predatory pay-for-play open source journal, *Environmental Sciences Europe*—where Seralini had [published before](#). [For an analysis of the study, click [here](#)] The journal has an estimated Impact Factor of .55. That would place it about 190th out of the 210 journals in the “environmental sciences” category at Thomson Scientific. (For comparison, Food and Chemical Toxicology has an IF of just above 3, and a ranking of 27th.)

This [study](#) is almost identical to his prior retracted work with some minor but important differences. Seralini claimed in a [press release](#) that the republished study was peer reviewed but that is [not accurate](#), according to the publishing journal’s editor [Henner Hollert](#). The three reviewers hired by ESEU was to check that there had been no change in the scientific content of the paper, Hollert added.

As before, the research claimed that rats fed a diet containing NK603—a seed variety made tolerant to the spraying of glyphosate (Monsanto’s Roundup herbicide)—died earlier than those on a standard diet. The

Séralini team reported that 50 percent of males and 70 percent of females died prematurely, compared with only 30 percent and 20 percent in the control group. The number of rats used in the study was too small to draw statistically meaningful conclusions. The study team also selected a breed of rat to use in the experiments in which 80 percent routinely develop cancers, further obscuring the results. Some of the rats fed GM corn outlived the control group, further confusing the picture. The newly-released study, as the first version, did not include any pictures of the control rats. Critical scientists say that is most likely because the type of rat used is tumor prone and would almost certainly show numerous tumors after two years of life; including pictures of control rats with tumors would further undermine Séralini's claims that the cancer was caused by the corn or glyphosate.

In 2014, Séralini and this team published a study in *BioMed Research International* claiming that pesticides were more toxic than regulatory bodies had previously thought. The study prompted Ralf Reski, one of the editors of the journal in which it was published, to resign. Reski said, "I do not want to be connected to a journal that provides [Séralini] a forum for such kind of agitation."

Séralini et al. published "[Laboratory Rodent Diets Contain Toxic Levels of Environmental Contaminants: Implications for Regulatory Tests](#)"- in July 2015, which maintained that all safety studies of pesticides and genetically modified foods are 'invalid' because, the researchers claim, the dried feeds used as control diets for lab animals are "contaminated" by GMOs, pesticides, heavy metals and other substances. According to scientists, there is an absence of any data suggesting a correlation between diet and phenotype, a trait, in laboratory rodents. The researchers presented zero evidence from their own work or published work that feed contamination is an issue for laboratory animal health. They presented no data on animal health and no data about which feeds, fed to which strains produce which pathological phenotypes. They also ignored the fact that different strains of rodents have different phenotypes and rates of spontaneous pathology. The authors made a huge logical leap in concluding that this data calls into question all historical data used as external controls.

- GLP has an analysis of the Séralini study [here](#).
- GLP has collected assessments of the study from scientists around the world [here](#).

## Séralini Affair

What became known as the Séralini Affair began in September 2012, and involved the publication of an experiment conducted by a group led by Séralini involving the feeding of of Monsanto's Round-Up-resistant NK603 maize (called corn in North America) and the herbicide Round-Up to rats, over the rats' two-year lifespan.

Séralini had required that journalists, in order to receive a copy of the paper prior to the press conference, sign a confidentiality agreement prohibiting them from contacting other researchers for comment before the press conference. During the press conference, Séralini also announced he was releasing a book and a documentary film on the research. The press conference received extensive coverage in the media.

In the paper and in the press conference, Séralini claimed that the results showed that Round-Up-

resistant maize and Round-Up are toxic. The abstract indicates: “The health effects of a Roundup-tolerant genetically modified maize (from 11% in the diet), cultivated with or without Roundup, and Round-Up alone (from 0.1 ppb in water), were studied 2 years in rats. In females, all treated groups died 2–3 times more than controls, and more rapidly. This difference was visible in 3 male groups fed GMOs. All results were hormone and sex dependent, and the pathological profiles were comparable.” The study used 200 Sprague-Dawley rats, 100 male and 100 female, and divided them into twenty groups with 10 rats each; ten experimental conditions were tested on male rats and separately on female rats for two years.

Other long-term studies, which were publicly funded, have uncovered no health issues. The Japanese Department of Environmental Health and Toxicology released a [52-week feeding study](#) of GM soybeans in 2007, finding “no apparent adverse effect in rats.” In 2012, a team of scientists at the University of Nottingham School of Biosciences [released](#) a review of 12 long-term studies (up to two years) and 12 multi-generational studies (up to 5 generations) of GM foods in the same journal that published the Seralini paper, concluding there is no evidence of health hazards.”

The release of the book and movie in conjunction with the scientific paper, and the requirement that journalists sign a confidentiality agreement, were also criticized and negatively peer reviewed.

## Scientific evaluation

As summarized on Wikipedia, the study was widely criticized. The London-based [Science Media Centre](#), which assists reporters when major science news breaks, posted an [entire page of criticisms](#). Scientists claimed that Seralini’s conclusions were impossible to justify given the experimental design – the small sample size together with the length of the study together with the known high incidence of tumors in the species of rats used.

The paper was also challenged by [numerous food standards agencies](#). Many claimed that the conclusions were impossible to justify given the statistical power of the study. Sprague-Dawley rats have a lifespan of about two years and have a high tendency to get cancer over their lifespan (one study found that over eighty percent of males and over seventy percent of females got cancer under normal conditions). The Seralini experiment lasted the normal lifespan of these rats, and the longer the experiment went, the more statistical “noise” there was—the more rats get cancer naturally, regardless of what was done to them. For the experiment to have adequate statistical power, all the groups – control groups and test groups – would have to number at least 65 rats per group in order to sort out any experimentally caused cancers from cancers that would occur normally – but the Seralini study had only ten per group.

OECD (Organisation for Economic Cooperation and Development) guidelines recommends 20 rats for chemical-toxicity studies, and 50 rats for carcinogenicity studies. In addition, if the survival of the rats is less than 50% at 104 weeks (which is likely given the Sprague-Dawley rats used in the study) the recommended number of rats is 65.

Dr. Francis Nang’ayo of the African Agricultural and Technology Foundation<sup>[4]</sup> criticized the study for having used rats that were susceptible to cancer. “In science, the sample size for a study of such a magnitude should be at least 50 yet Seralini used only ten rats which to me greatly compromise the

findings,” added Mr. Nang’ayo.

King's College London Professor Tom Sanders wrote that since Sprague-Dawley rats are susceptible to mammary tumors when food intake is not restricted, data should have been provided about how much food the rats were fed (as well as the presence of fungus in the feed, another confounder). Sanders also wrote of this study, “The statistical methods are unconventional ... and it would appear the authors have gone on a statistical fishing trip.”

The Washington Post quoted food activist and GMO critic Marion Nestle, the Paulette Goddard professor in the Department of Nutrition, Food Studies and Public Health at New York University: “[I] can’t figure it out yet....It’s weirdly complicated and unclear on key issues: what the controls were fed, relative rates of tumors, why no dose relationship, what the mechanism might be. I can’t think of a biological reason why GMO corn should do this.....So even though I strongly support labeling, I’m skeptical of this study.” University of Calgary Professor Maurice Moloney, among others, wondered why there were so many pictures in the study, and in sympathetic news reports about it, of treated rats with horrific tumors, but no pictures of the rats in the control group.

Many national food safety and regulatory agencies reviewed the paper and condemned it. The German Federal Institute for Risk Assessment VP Reiner Wittkowski said in a statement, “The study shows both shortcomings in study design and in the presentation of the collected data. This means that the conclusions drawn by the authors are not supported by the available data.”

A joint report by three Canadian regulatory agencies also “identified significant shortcomings in the study design, implementation and reporting.” Similar conclusions were reached by the French HCB and the National Agency for Food Safety, the Vlaams Instituut voor Biotechnologie, the Technical University of Denmark, Food Standards Australia New Zealand, the Brazilian National Technical Commission on Biosafety, and the European Food Safety Authority (EFSA). The conclusions of the EFSA evaluation were:

The study as reported by Séralini *et al.* was found to be inadequately designed, analysed and reported...The study as described by Séralini *et al.* does not allow giving weight to their results and conclusions as published. Conclusions cannot be drawn on the difference in tumour incidence between treatment groups on the basis of the design, the analysis and the results as reported. Taking into consideration Member States’ assessments and the authors’ answer to critics, EFSA finds that the study as reported by Séralini *et al.* is of insufficient scientific quality for safety assessments.

The [European Federation of Biotechnology](#) lobby, which counts Monsanto and other GM firms among its members, called for the paper to be retracted, calling its publication a “dangerous failure of the peer-review system.”

Six French national academies (of Agriculture, Medicine, Pharmacy, Science, Technology and Veterinarians) issued a joint statement – “an extremely rare event in French science”– condemning the study and the journal that published it. The joint statement dismissed the study as ‘a scientific non-event’.



The Food and Chemical Toxicology journal, an Elsevier imprint, has a full peer review process, and at least three scientists were needed to endorse the Seralini article prior to publication. The journal in question published a statement in their November 2012 issue, that “the Editors have encouraged those people with concerns to write formally to the Editor-in-Chief, so that their views can be publicly aired.”

In March 2013, the same journal that published the Seralini study, published a letter from Erio Barale-Thomas, Principal Scientist of Johnson & Johnson Pharmaceutical Research and Development and the President of the Conseil d'Administration of The Société Française de Pathologie Toxicologique (SFPT, French Society of Toxicologic Pathology. SFPT is “a non governmental/non profit organization formed by veterinarians, physicians, pharmacists and biologists specialized in veterinary and toxicologic pathology. The letter criticized the Seralini study on several fronts, and concluded: “However, given this study presents serious deficiencies in the protocol, the procedures and the interpretation of the results, the SFPT cannot support any of the scientific claims drawn by the authors, and any relevance for human risk assessment. This letter presents the consensus scientific opinion of the Conseil d'Administration of the SFPT.”

As a result of the publication of the Seralini paper, the Belgian Federal Minister of Public Health asked the Belgian Biosafety Advisory Council (BBAC) to evaluate the paper. The BBAC was asked to “inform the Minister whether this paper (i) contains new scientific information with regard to risks for human health of GM maize NK603 and (ii) whether this information triggers a revision of the current authorisation for commercialisation for food and feed use of this GM maize in the European Union (EU). Responding to the two point mandate, the BBAC committee, whose members are drawn from the Belgian biotech Professoriat, pointed out that “the long duration of this study is a positive aspect since most of the toxicity studies on GMOs are performed on shorter periods,” and concluded:

“Given the shortcomings identified by the experts regarding the experimental design, the statistical analysis, the interpretation of the results, the redaction of the article and the presentation of the results, the Biosafety Advisory Council concludes that this study does not contain new scientifically relevant elements that may lead to reconsider immediately the current authorisation for food and feed use of GM maize NK603. Considering the issues raised by the study (i.e. long term assessment), the Biosafety Advisory Council proposes EFSA urgently to study in depth the relevance of the actual guidelines and procedures. It can find inspiration in the GRACE project to find useful information and new concerted ideas.”

## **Support for Seralini paper**

According to Wikipedia, Seralini defended the study design, the interpretation of the results, and manner and content of the publication. Support for the study came from ENSSER (European Network of Scientists for Social and Environmental Responsibility), of which CRIIGEN, the institute that Seralini founded and that funded the study, is a member. A study funded by and conducted in consultation with ENSSER also found that EFSA applied double standards. An open letter in support of Seralini's article, signed by about 300 scientists, doctors, scholars and activists, was published in Independent Science News, a project of the Bioscience Resource Project, both of which oppose GM crops.

The German research group Testbiotech, which opposes GMOs and which believes that regulators have been captured by the biotech industry, posted a report critical of the EFSA's reaction to the study as not applying the same standards to studies submitted by industry as it did to Seralini's study.

A statement opposing the controversy, and especially the attacks on Seralini, was published in the newspaper *Le Monde* and was signed by 140 French scientists; the letter said: "We are deeply shocked by the image of our community that this controversy gives citizens. Many of the threats to our planet have been revealed by scientists isolated and confirmed by many studies coming from the scientific community. In this case, it would be more efficient to implement research on the health and environmental risks of GMOs and pesticides, improve toxicological protocols used for placing on the market and finance a variety of researchers in this domain...."

## Reaction in the media

The press conference led to wide coverage in the media, which "energized opponents of GM food, especially in Europe". *Le Nouvel Observateur* covered the press conference in a story called, "Yes, GMOs are poisons!".

Jon Entine in [\*Forbes\*](#): "Seralini's research is anomalous. Previous peer-reviewed rat feeding studies using the same products (NK603 and Roundup) have not found any negative food safety impacts."

Andrew Revkin dubbed it another instance of "single-study syndrome", and contended that the study was in support of an "agenda".

Henry I. Miller, [writing for Forbes](#), said of the study that "the investigators have refused to release all the data from the experiment, which constitutes scientific misconduct." Seralini responded by saying, "...that he won't make any data available to the EFSA and the BfR until the EFSA makes public all the data underpinning its 2003 approval of NK603 maize for human consumption and animal feed."



*The Guardian's* Environmental Blog [stated](#) that the study linking GM maize to cancer “must be taken seriously by regulators” and that although it “attracted a torrent of abuse”, “it cannot be swept under the carpet”. It noted that CRIIGEN funded the research although it did not report the source of the funds from organic interests and Greenpeace, which are vocal in opposition to genetic modification, and reported Séralini's response: namely, that studies in support of GM food are usually funded by “corporates or bypro-biotech institutions”.

## GMO-Séralini

Séralini's research claims are officially promoted via a website run and managed by U.K. organic exporter, Sustainable Pulse publisher and anti-GMO activist [Henry Rowlands](#).<sup>[5]</sup> GMOSeralini.org offered a [defense of the retracted paper](#) that is widely echoed by anti-GMO websites.

## Advocacy on behalf of paper

Séralini's publication related publicity campaign (reported to be more than 5 million Euros) was funded in part with more than 3.2 million Euros by French organic food giants Auchan and Carrefour.<sup>[6]</sup> A million euros were also donated by the the Fondation pour le progrès de l'homme (FPH – Foundation for the Progress of Humankind), a foundation with a reputation for generosity towards an assortment of anti-GMO groups. Séralini's work is also funded by the activist group Greenpeace.

Publicity for the release of his GMO rat feeding study claims was coordinated by the Sustainable Food Trust and Patrick Holden. A PR agency called Greenhouse PR managed the events, with media releases, sample tweets etc. and a press release telling media that “for pictures of the rats contact Greenhouse PR” (this page has since been removed from the Sustainable Food Trust website). Greenhouse PR also helped SFT leverage Holden's close relationship with the Prince of Wales to try to secure positive media coverage for Séralini's controversial GMO corn study. Its website says: “Greenhouse helped organise a series of events hosted by Patrick Holden at Highgrove Farm, home of the Prince of Wales. Events were attended by leading industry opinion formers and key media and included off-the-record debates on issues related to the future of food and farming, followed by a guided tour of the farm.

To raise awareness of GM on behalf of the SFT, Greenhouse also launched peer-reviewed scientific research into the impact of GM feed on the health of rats, accompanied by an educational website calling for more regulation and research.”<sup>[7]</sup> Former SFT staffer [Henry Rowlands](#), now an organic marketing exporter and publisher, hosts and maintains the GMO-Seralini official websites. [\[GLP profile here\]](#) Seralini is linked to a company called Sevene Pharma, where he is a consultant. The company sells homeopathic remedies. He is also reportedly linked to the ‘Invitation to Life’ cult.

## Books

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Séralini, Gilles-Éric (2004). *Ces OGM Qui Changent Le Monde*. Flammarion Publishing. ISBN [2080800620](#).

- Séralini, Gilles-Éric (2006). *Après Nous le Déluge?*. Flammarion Publishing. ISBN [2082105490](#).

## Criticisms

Séralini's claims and tactics have been heavily criticized by the regulatory, academic and science watchdog communities. Examples include:

- [CRIIGEN evaluation](#), by David Tribe, GMO Pundit, December 2012.
- [Genetically modified corn and cancer – what does the evidence really say?](#), by Ashley Ng, The Conversation, September 2012.
- [700 Researchers Call On Gilles-Eric Seralini To Release GMO Test Data](#), Science 2.0, October 2012.
- [Being Gilles-Eric Seralini: Inside the mind of the anti-GM movement – See more at:   
https://geneticliteracyproject.org/2013/06/10/being-gilles-eric-seralini-inside-the-mind-of-the-anti-gm-movement/#sthash.RVnii37e.dpuf](#), by Jon Entine, Genetic Literacy, June 2013.
- [Scientists smell a rat in fraudulent study](#), by Bruce Chassy & Henry Miller, Forbes Magazine, September 2012.
- [Anti-GM corn study reconsidered: Seralini finally responds to torrent of criticism](#), AEI, November 2012.
- [Seralini paper influence Kenya ban of GMO imports](#), by Emily Willingham, Forbes Magazine, December 2012.
- [Seralini GMO rats & Cancer](#), Tech 'N You, 2013.
- [Why I think the Seralini GM feeding trial is bogus](#), by Andrew Kniss, Control Freaks, September 2012.
- [Anti-GMO Scientist Gilles-Eric Seralini, Activist Jeffrey Smith Withdraw from Food Biotech Debate](#), by Jon Entine, Forbes Magazine, May 2013
- [Seralini anti-Monsanto study was so poorly conducted it harms the anti-GMO movement](#), The Daily Paul, September 2012.
- [The Seralini Rule](#), Skeptico, June 2013. Excerpt: "I have a new rule for debating anti-GMO people: If you favorably cite the 2012 Séralini rats fed on Roundup ready maize study, you just lost the argument..."

- [March Against Monsanto](#), The Progressive Contrarian, May 2013. Excerpt: “I mentioned Seralini and Smith were frauds who refuse to publicly debate scientists who want to challenge them...”
- [Science says GMOs are safe](#), Skeptical Raptor, June 2013. Excerpt: “But be forewarned, if it is junk science, I will call it junk science, like Gilles-Eric Seralini et al.’s paper about GMO corn causing cancer. Except it was poorly designed, utilized bad statistics, and really provided no evidence whatsoever for anything except that Seralini is an incompetent scientist...”
- [Was Seralini GMO study designed to generate negative outcome](#), Storify, October 2012.
- [A critique of the Seralini Study](#), by Lee Grandmason, News 24 South Africa, September 10, 2014.
- [The Ugly Revenge of Seralini: A Stroll in the Wonderful World of GMO Disinformation](#), by Wackes Seppi, Contre Points (France), September 2, 2014
- [GMOs: when scientists forget to do science](#), “Seralini does not seem to be interested in dealing the matter seriously. He is convinced that he is right – and willing to adopt unscientific position to have the last word.” by Ana Gerschenfeld, Publico (Portugal), July 7, 2014.
- [Summary of science reaction to Seralini study](#)

## References

- 1 [Gilles Eric Seralini – President of the Scientific Board – Molecular Biology Professor](#), by HH, CRIIGEN website, November 12, 2008.
- 2 <http://gantdaily.com/2013/11/27/is-africa-ready-for-genetically-modified-foods/>
- 3 <http://www.journals.elsevier.com/food-and-chemical-toxicology/news/journal-statement/>
- 4 <http://mobile.nation.co.ke/business/Study-on-GMOs-withdrawn/-/1950106/2093496/-/format/xhtml/-/lt3pkm/-/index.html>
- 5 <http://gmoseralini.org/en/>
- 6 <http://gmopundit.blogspot.com/2012/09/auchan-and-carrefour-financed-criigen.html>
- 7 <http://greenhousepr.co.uk/clients/about/sustainable-food-trust/>