SCIENTIFIC-IMAGE SLEUTH FACES LEGAL ACTION FOR CRITICIZING PAPERS

Researchers say the complaint filed against Elisabeth Bik could have a 'chilling effect' on scholarly criticism.

By Holly Else

A prominent French microbiologist has filed a criminal complaint against a world-renowned research-integrity specialist after she publicly flagged concerns about his published work, including papers suggesting that the drug hydroxychloroquine was effective at treating COVID-19, a claim that has now been refuted.

The complaint was filed on 29 April to a prosecutor in Marseille, France, by a lawyer acting on behalf of Didier Raoult and structural biologist Eric Chabriere, both at the city's Hospital-University Institute Mediterranean Infection (IHU). It accuses Elisabeth Bik — a microbiologist turned research-integrity consultant, based in California — of aggravated moral harassment, attempted blackmail and attempted extortion.

Bik — whose work scrutinizing images in research papers has earned her a worldwide following and has led to more than 170 retractions — denies these allegations and says that her comments about the pair's work are standard scientific critiques.

More than 1,000 scientists have rallied to support her in an open letter that claims the case could have a "chilling effect" on scholarly criticism.

Potential problems

Raoult leads the IHU, an institute dedicated to the study of infectious diseases, and is well known for his work on gigantic mimiviruses. Early in the COVID-19 pandemic, he shot to global prominence after he authored a preprint, with Chabriere and others, describing a small study that suggested the antimalarial drug hydroxychloroquine could be used to treat people hospitalized with COVID-19. Many thought the drug was promising, including former US president Donald Trump, but it was later shown to be ineffective. The study was accepted by the *International Journal of Antimicrobial Agents* in March 2020 (P. Gautret *et al. Int. J. Antimicrob. Agents* **56**, 105949; 2020), a day after it appeared on preprint server medRxiv.

Around a week after its publication, Bik wrote a blogpost about the study, noting "many potential problems with the way the data and the peer review process were handled". Her concerns included missing data, potential confounding factors, a lack of clarity on the timeline of ethical approval and study start date, and the fact that the paper was submitted and accepted within 24 hours. Bik wrote in the blogpost that this suggests any peer review was done in "an incredibly fast time".

As well as outlining the concerns on her blog, Bik publicized them on Twitter and PubPeer, a website for post-publication peer review. She has since continued to scrutinize work from the two researchers, and has flagged concerns with 62 of Raoult's papers and 14 of Chabriere's on PubPeer, including 2 that they co-authored about hydroxychloroquine. In some cases, she also contacted the journals that published the papers to raise concerns.

Bik, Raoult and Chabriere have had public, heated exchanges on Twitter. After she flagged studies that refuted his claims about hydroxychloroquine, Raoult called her a "witch-hunter". Chabriere has called Bik a "dung beetle", and tweeted that she is harassing him and his institution.

The pair initiated legal action in France on 29 April. In a letter to *Nature*, a lawyer acting on behalf of Raoult and Chabriere said: "This is a criminal complaint based on facts of aggravated moral harassment, attempted blackmail and attempted extortion." They declined to give more specific details about the alleged offences, but said that the researchers "will take action in order to put an end to this type of unacceptable behaviour".

Bik says she has not been officially notified of these charges and does not know for certain what they relate to.

'Strategy of harassment'

After learning about the criminal complaint, Lonni Besançon, a computer scientist at Monash University in Australia, and colleagues wrote an open letter in support of Bik (see go.nature.com/3g7e). The letter, which was published on the OSF Preprints server on 18 May and has gathered more than 1,000 signatures, calls Raoult's actions a "strategy of harassment and threats" that could create "a chilling effect for whistle-blowers and for scholarly criticism more generally".

"Investigating someone's research is definitely not harassment. This is a scientific question, this should not fall onto the legal system to figure out," says Besançon.

"Unfortunately, this is nothing new," says Lex Bouter, a research-integrity scholar at the Free University of Amsterdam. "Whistle-blowing is risky and can lead to real damage to the whistle-blower."

"Bona fide whistle-blowers deserve firm protection and should not be sued for bringing out uncomfortable truths," he adds.

Bik calls the social-media backlash against her worrisome. "It is a very lonely fight if you are attacked on Twitter," she says. The tweets from Raoult and Chabriere have stopped, she

GEORGE FREY/AFP VIA GETTY

Some studies claimed that hydroxychloroquine could be used to treat COVID-19.

adds, but anonymous accounts continue to tweet malicious things to her. She says it is unclear whether these are related to her posts about papers by Raoult and Chabriere.

Raoult and Chabriere's lawyer says that neither researcher, nor their institution, wishes to comment about the allegations in the letter.

Co-organizer of PubPeer Boris Barbour, a neuroscientist at the public-health research institute IBENS in France, is also named in the criminal complaint. Barbour declined requests for comment from *Nature*'s news team. A spokesperson for PubPeer told *Nature*: "A successful legal action could have a chilling effect on post-publication peer review."

"Direct legal action against the site has never been initiated," the spokesperson notes. "However, we have in the past resisted a subpoena seeking to identify our users, and PubPeer does occasionally receive and respond to legal threats."

Nature contacted ten journals that published papers authored by Raoult that have been flagged by Bik on PubPeer, including two papers about hydroxychloroquine and COVID-19, which he co-authored with Chabriere. Two of the journals say they have a policy of not commenting on such cases, and one says that no concerns have been raised about the paper in question. However, one of the papers flagged has since been retracted, one has had an erratum published and two others are under investigation.

Bik says she wonders why Raoult has not responded to specific concerns she raised about the papers. "Why doesn't he show me proof that I am wrong? I would be happy to accept that," she says. She adds that she has tried to not be hesitant about raising concerns on PubPeer in light of the case. "I don't want to be threatened. If I have broken the law, I would stop," she says. "But I have not."

LIMIT ON LAB-GROWN HUMAN EMBRYOS DROPPED

International stem-cell society relaxes the influential 14-day rule in its latest research guidelines.

By Nidhi Subbaraman

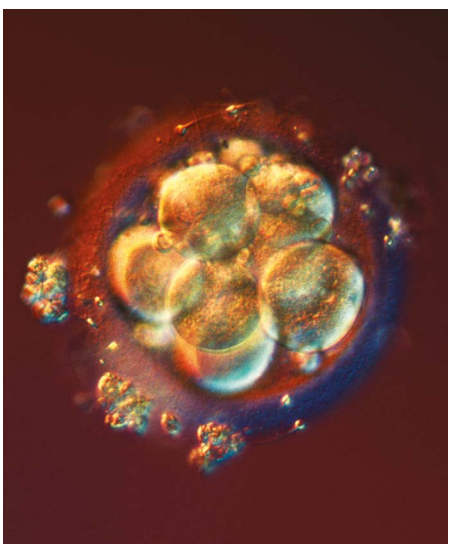
The international body representing stem-cell scientists has torn up a decades-old limit on the length of time that scientists could grow human embryos in the lab, giving more leeway to researchers who are studying human development and disease.

Previously, the International Society for Stem Cell Research (ISSCR) recommended that scientists culture human embryos for no more than two weeks after fertilization. But on 26 May, the society said it was relaxing this prominent limit, known as the 14-day rule. Rather than replace or extend the limit, the ISSCR now suggests that studies proposing to grow human embryos beyond the two-week mark be considered on a case-by-case basis, and be subjected to several phases of review to determine at what point the experiments must be stopped.

The ISSCR made this change and others to its guidelines for biomedical research in response to rapid advances in the field, including gene-editing innovations.

"It's been a major revision," says Robin Lovell-Badge, a stem-cell biologist at the Francis Crick Institute in London and chair of the ISSCR steering committee that wrote the new guidelines.

Last revised in 2016, the document offers a rubric for what science the biomedical community agrees is worthy, and which projects are off-limits.



LENNART NILSSON, TT/SPL

Scientific advances have made it possible to grow human embryos in the lab for weeks.

In the United States, where biomedical research involving stem cells or human embryos has been controversial for decades, and federal support has waxed and waned, the guidelines carry unusual weight, says Josephine Johnston, a bioethicist at the Hastings Center in Garrison, New York. Although US agencies have some policies covering such work, review committees at institutions or private funders often turn to the ISSCR's document as the only regularly updated set of guidelines representing the views of the scientific community. "That means that when they make a change like this, it is actually fairly significant," says Johnston.

The 14-day rule

First proposed in 1979, the 14-day rule bars research on embryos after they reach a key point of complexity. At least a dozen countries, including the United Kingdom, Canada and South Korea, have adopted the concept as law. Others, including the United States, have accepted it as a standard that guides researchers, reviewers and regulators.

With the new ISSCR recommendations, Lovell-Badge envisions that the longer a researcher wants to culture an embryo for, the tougher the country's regulatory authorities would have to make the review process. "We're not simply giving green lights for people to do this research," he says. Furthermore, the guidelines say that public comment should be part of the review.

Before 2016, researchers weren't able to keep human embryos alive in a dish for 14 days, so the rule didn't bar any projects. But that year, two independent research teams announced that they had been able to grow human embryos in a dish for up to 13 days — they then terminated the experiments in accordance with the 14-day standard.

Such advances have led some ethicists and researchers to argue that the decades-old rule is antiquated and ripe for revision. Allowing embryos to grow past 14 days, researchers say, could produce a better understanding of human development, and enable scientists to learn why some pregnancies fail, for instance. The revised ISSCR guidelines are a prompt to begin conversations about when it would be valuable to grow embryos beyond 14 days, says Alta Charo, a bioethicist at the University of Wisconsin Law School in Madison, who was part of the ISSCR steering committee. "We didn't debate it before — now it's time to debate."

In the past decade, scientists have made increasingly sophisticated models of embryos from human stem cells, demonstrating one way to study human development while avoiding the controversial use of embryos from fertility clinics. Such embryo-like structures are too rudimentary to grow into a person, scientists say. But relaxing the 14-day limit would