

**SPOTTED**

# Editing history; shot talk; catch of the day

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## WEEK OF FEBRUARY 13<sup>TH</sup>

### Editing history

A year-long battle over key patents for the gene-editing tool CRISPR came to a close on Wednesday, with the Broad Institute of Harvard and MIT winning out.

Since 2014, the institute has held the patents for the use of CRISPR to edit genes in human cells. But lawyers for the University of California, Berkeley claimed those patents overlap with ones they had previously applied for. The Berkeley patents pertain to CRISPR's gene-editing capabilities in all cell types — human or nonhuman.

The U.S. patent office **ruled that the two sets of patents do not overlap.**

Berkeley's **Jennifer Doudna** was the first to describe the technology, but the decision recognizes that the Broad Institute's **Feng Zhang** applied CRISPR to human cells, revolutionizing biomedical research. Berkeley's patents are still moving forward, however, so the story isn't over.

"They will have a patent on the green tennis balls," Doudna told *Nature*. "We will have a patent on all tennis balls."

The patent decision comes on the heels of an announcement by a top U.S. science advisory panel **in support of editing human embryos** to circumvent "serious diseases and disability," *Nature* reported.

#### SOURCES:

**Nature** / 15 Feb 2017

Broad Institute wins bitter battle over CRISPR patents

<http://www.nature.com/news/broad-institute-wins-bitter-battle-over-crispr-patents-1.21502>**Nature** / 14 Feb 2017

US science advisers outline path to genetically modified babies

<http://www.nature.com/news/us-science-advisers-outline-path-to-genetically-modified-babies-1.21474>

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## Shot talk

Vaccine skeptic **Robert F. Kennedy Jr.** says plans are in motion to **create a vaccine safety commission**.

Kennedy has **long pushed the autism-vaccine myth**. He first mentioned the commission about a month ago, saying then-president-elect Trump had asked him to lead the effort. At the time, Trump's team said they were exploring the possibility of a commission on autism, not vaccines.

Kennedy says he has since spoken with presidential aides and believes plans for a vaccine safety commission are **moving forward**. "Why would anybody not want a vaccine safety commission?" he said on Wednesday, according to *STAT*.

In a Viewpoint for *Spectrum*, David Mandell **denounced Kennedy's involvement** in a vaccine safety panel. "I am confident that the president-elect could not have found someone less qualified for this role," Mandell wrote.

Trump has also made statements falsely linking autism to vaccines. In 2012, he tweeted "Massive combined inoculations to small children is the cause for big increase in autism." He seemed to be revisiting the debunked link again this week in a meeting with teachers and principals.

"When you look at the tremendous increase, it's really such an incredible — it's really a horrible thing to watch, the tremendous amount of increase," he said, according to **a story in *The Hill***. "Maybe we can do something."

### SOURCES:

**STAT** / 15 Feb 2017

Robert F. Kennedy Jr. says he expects Trump vaccine panel will move forward

<https://www.statnews.com/2017/02/15/vaccines-trump-panel-kennedy/>**The Hill** / 14 Feb 2017

Trump asks about autism in educators meeting

<http://thehill.com/homenews/administration/319435-trump-asks-about-autism-in-educators-meeting>

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## Catch of the day

A drug discovered in zebrafish shows promise in children with **Dravet syndrome**, a severe form of **epilepsy** that often co-occurs with autism.

Dravet syndrome usually stems from a mutation in the gene **SCN1A**, which encodes a sodium channel. The same mutation causes seizures in zebrafish.

In the new study, researchers found that the weight-loss drug lorcaserin eases seizure activity in fish carrying the SCN1A mutation. They then tested the drug in five children with Dravet syndrome and saw a significant decrease in seizures, with no serious side effects. One child went from having multiple seizures every day to having none for two weeks.

“This is the first time that scientists have taken a potential therapy discovered in a fish model directly into people in a clinical trial,” **Vicky Whittemore**, program director at the National Institute of Neurological Disorders and Stroke, said in a **statement about the work**.

The findings were published 10 January in *Brain*.

#### SOURCES:

**Brain** / 10 Jan 2017

Clemizole and modulators of serotonin signaling suppress seizures in Dravet syndrome

<https://academic.oup.com/brain/article-abstract/doi/10.1093/brain/aww342/2880260/Clemizole-and-modulators-of-serotonin-signalling?redirectedFrom=fulltext>

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## Getting specific

A story in *STAT* this week highlights the **dearth of drugs to treat neuropsychiatric conditions**.

The story centers on Katie, a 35-year-old woman with schizoaffective disorder, a condition related to both schizophrenia and mood disorders. The antipsychotic drug **risperidone** helps to keep some of her symptoms at bay. But the decades-old drug, which is also used to treat aggression in children with autism, is not perfect, and its effects dwindle over time.

“At some point, I know I’ll have to find another drug,” Katie told *STAT*.

There is a growing appreciation among researchers that treatments for neuropsychiatric conditions need to target specific pathways in the brain. The problem is that many of these pathways are still a mystery.

“It took literally decades of work in the cancer field before we got to a level of mechanistic

understanding,” **Robert Desimone**, director of the McGovern Institute for Brain Research at MIT, told *STAT*. “That’s what the field has been missing all this time.”

Researchers at a **new center for autism research** at the Massachusetts Institute of Technology will focus on identifying pathways that underlie autism, Desimone says. Targeting these pathways might not eliminate features of autism. But it could reduce some features associated with the condition. “If we could improve the intellectual disability in autism by 50 percent, for example, that’d be huge,” he told *STAT*.

**SOURCES:**

**STAT** / 15 Feb 2017

Psychiatric drugs haven’t improved for decades. So researchers are scouring the brain for leads  
<https://www.statnews.com/2017/02/15/psychiatric-drugs-mental-illness/>

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## Faulty figure

The incidence of autism rose over the past decade, but not by 400 percent as **a new study in *Pediatrics*** suggests.

*MedPage Today* **called out the error** shortly after the study was published on Monday.

Researchers reported that the lifetime **prevalence** of autism increased 400 percent between 2007 and 2011. But they mistakenly calculated a 2007 prevalence rate of 0.5 percent when it should have been 1.9 percent. With the correct number, the increase in prevalence between 2007 and 2011 was 20 percent, not 400 percent.

The researchers plan to correct the mistake, *MedPage Today* reported.

“If anything, this study should remind us to be really careful when we look at statistics in manuscripts and maybe to push for more open data sharing,” the *MedPage Today* story reads. “Or, perhaps even more simply, we should remember that when a number doesn’t seem quite right, it’s usually not.”

**SOURCES:**

**MedPage Today** / 13 Feb 2017

A big oops for a major journal

[http://www.medpagetoday.com/Pediatrics/Autism/63101?xid=nl\\_mpt\\_DHE\\_2017-02-14&eun=g1046605d0r&pos=0](http://www.medpagetoday.com/Pediatrics/Autism/63101?xid=nl_mpt_DHE_2017-02-14&eun=g1046605d0r&pos=0)

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