

NEWS

Gene-edited marmosets may mimic Rett syndrome traits

BY EMILY ANTHES

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Researchers have used the gene-editing tool CRISPR to disable MECP2, the gene mutated in Rett syndrome, in marmoset embryos. The six such marmosets seem to recapitulate aspects of Rett, a condition related to autism.

Rett syndrome is a neurological condition characterized by intellectual disability, motor problems, social impairments and seizures.

Primates such as marmosets have more complex brains and social behaviors than rodents do, and may make better animal models to study Rett and other conditions of brain development.

“We believe that this marmoset replicates the symptoms of Rett patients,” says **Noriyuki Kishi**, research scientist in Hideyuki Okano’s lab at the RIKEN Center for Brain Science in Japan.

Kishi presented the unpublished work today at the **2019 Society for Neuroscience annual meeting** in Chicago, Illinois.

Last year, Kishi **presented data** from two such marmosets. He and his colleagues have altogether created three male animals and three females. One of the males died shortly after birth, before the scientists could evaluate it. The other five produced no functional MECP2 protein, the researchers reported.

Developmental plateau:

The marmosets were born with brains of average size, but the brains stopped growing after two or three months.

“This is not a delay,” Kishi says. “The growth just stops.”

Four of the marmosets died between 3 and 5 months of age. The last one died when it was 8 months old. Some of the marmosets died of aspiration pneumonia, which may be related to their genetic condition, Kishi says; people with Rett often have breathing problems.

The MECP2 marmosets were also less physically active than typical marmosets.

The scientists hope to evaluate future animals' behavior in more detail, but the short lifespans make the task a challenge. Many behavioral tests require training marmosets — which aren't typically weaned until they're 3 months old — to perform specific tasks, Kishi says.

For more reports from the 2019 Society for Neuroscience annual meeting, please [click here](#).