Japan mouse study finds hair-loss gene: researcher

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An elderly man gets his hair trimmed by a roadside barber at a park in Beijing. Experiments on mice have revealed a gene that is linked to early hair loss, a Japanese researcher said, sparking hopes for a treatment to prevent thinning and baldness in humans. The research team found that the absence of a gene known as Sox21 can lead to early hair loss.

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The research team found that the absence of a gene known as Sox21 -- which it said is shared by humans and mice -- can lead to early hair loss.

The scientists biologically engineered mice by blocking the gene and found that the rodents started losing hair on their heads about 15 days

after birth and became completely naked a week later.

"Normally, new hair appears right after old hair falls out," said Yumiko Saga, a mammalian development professor at the National Institute of Genetics.

"But the hair of these mice fell out very early, making their bald periods longer," she told AFP, adding that although the mice started to grow new fur, the replacement hair also kept falling out quickly.

The Sox21 gene has in the past been shown to be linked to the formation of nerve cells, but the Japanese study was the first to indicate its function in ensuring hair retention, she said by telephone.

"It is entirely possible that the gene is also a cause of thinning hair" among humans, Saga said.

The study, jointly conducted with Hideyuki Okano, professor at the School of Medicine at Tokyo's Keio University, found that the lack of the gene leads to the improper formation of cuticles, the outer layer of hair.

"Cuticles usually have a scaled structure, locking hair in the scalp," said Saga. Blocking the gene in the mice meant that their cuticles lacked this structure, making the hair fall out more quickly, Saga said.

The study could lead to the development of a medical treatment against thinning hair, Saga said, but she added that she had no immediate plans for further research to develop a human application.