Cure for male pattern baldness given boost by sugar discovery

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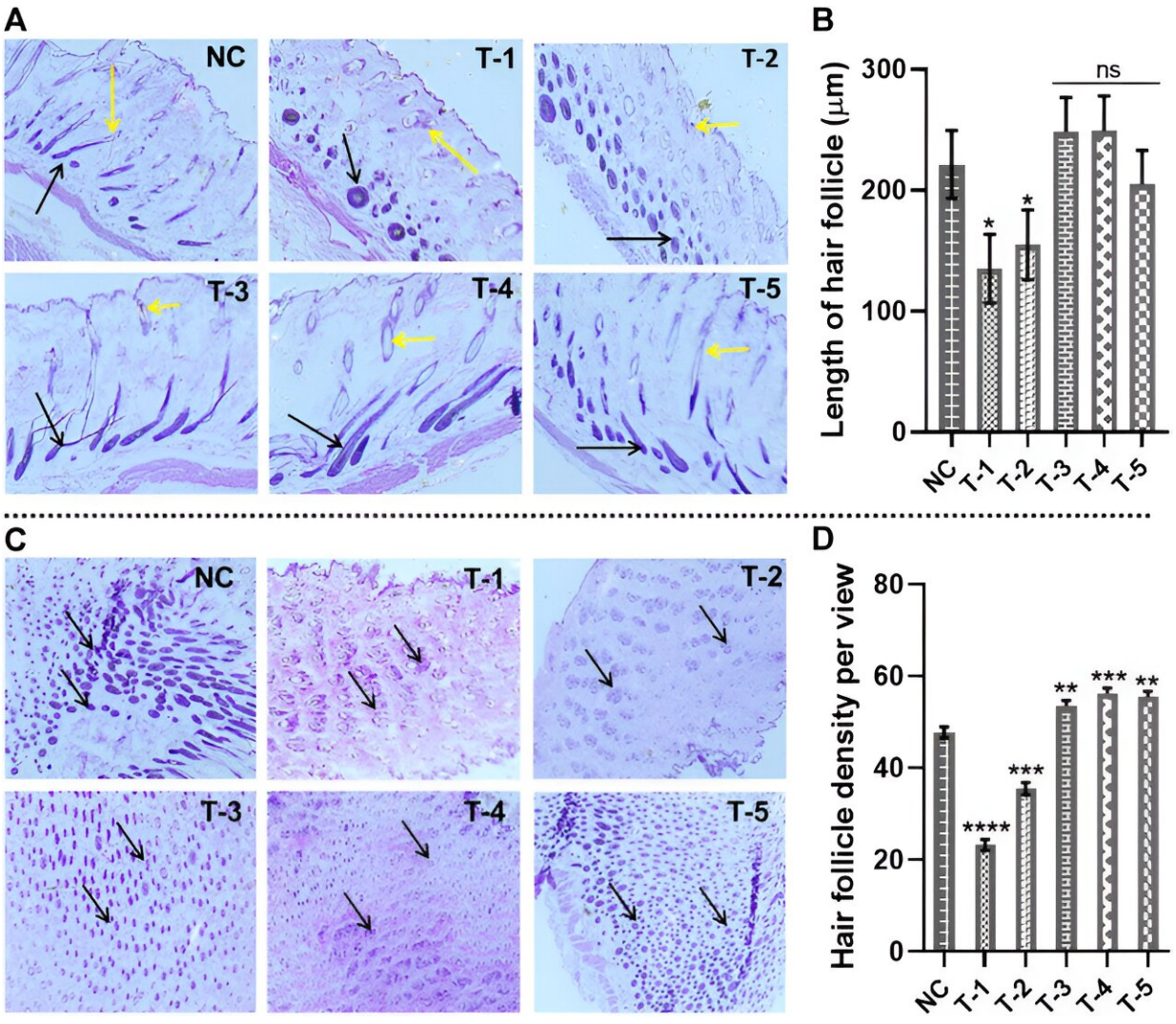

Microscopic analysis of skin sections retrieved on day 21 of experiment after H&E staining. Credit: *Frontiers in Pharmacology* (2024). DOI: 10.3389/fphar.2024.1370833

The key to curing male pattern baldness—a condition that affects up to 50% of men worldwide—could lie in a sugar that naturally occurs in the human body, according to scientists at the University of Sheffield.

In a study published in the journal *Frontiers in Pharmacology*, researchers have discovered that a sugar called 2-deoxy-D-ribose (2dDR), which plays a fundamental role in various biological processes both in animals and humans, can stimulate hair to regrow in mice.

Over the past eight years, scientists from Sheffield and COMSATS University Pakistan have been studying how the sugar can help to heal wounds by promoting the formation of new blood vessels. During the research, the team also noticed that hair around the healing wounds appeared to grow more quickly compared to those that hadn't been treated.

To explore this further, the scientists established a model of testosterone driven hair loss in mice—similar to the cause of pattern baldness in men. The team found that applying a small dose of the naturally occurring sugar helped to form new blood vessels, which led to hair regrowing.

Findings from the study show that the deoxy ribose sugar is as effective at regrowing hair as Minoxidil—an existing drug used to treat hair loss. However, the research offers a potential alternative approach to stimulating hair growth through a naturally occurring deoxy ribose sugar.

Professor Sheila MacNeil, Emeritus Professor of Tissue Engineering at the University of Sheffield, said, "Male pattern baldness is such a common condition, affecting men all over the world, but at the moment there are only two FDA licensed drugs to treat it.

"Our research suggests that the answer to treating hair loss might be as simple as using a naturally occurring deoxy ribose sugar to boost the blood supply to the hair follicles to encourage hair growth.

"The research we have done is very early stage, but the results are promising and warrant further investigation. This could offer another approach to treating this condition which can affect men's self-image and confidence."

Professor (Associate) Muhammed Yar (T.I.) of IRCBM, COMSATS University Pakistan, said, "This pro-angiogenic deoxy ribose sugar is naturally occurring, inexpensive and stable and we have shown it can be delivered from a variety of carrier gels or dressings. This makes it an attractive candidate to explore further for treatment of hair loss in men."

More information: Muhammad Awais Anjum et al, Stimulation of hair regrowth in an animal model of androgenic alopecia using 2-deoxy-D-ribose, *Frontiers in Pharmacology* (2024). DOI: 10.3389/fphar.2024.1370833

Provided by University of Sheffield