

# Scientists discover molecule that could revert cellular ageing

January 9 2018

---

Researchers at Instituto de Medicina Molecular (iMM) João Lobo Antunes have found that manipulating a single RNA molecule is enough to revert cellular aging.

Over time, cells age, contributing to the development of several diseases. Inducing [cellular regeneration](#) is one strategy to fight diseases associated with cellular aging. However, aged cells tend to be highly resistant to any type of manipulation intended to induce regeneration.

Ribonucleic acid, or RNA, is responsible for protein synthesis inside cells. However, a specific type of molecule, non-coding RNA, is never translated into protein. In fact, since the mapping of the human genome in 2001, it has been known that only about 2 percent is actually translated into proteins.

Now, a team led by Bruno de Jesus and Maria do Carmo-Fonseca has used a genetically modified mouse model to study [cellular aging](#) and regeneration. They found that cells derived from the skin of old mice produced higher amounts of a long, non-coding RNA molecule called Zeb2-NAT when compared to cells from young mice. By reducing the amount of this specific RNA molecule, it was possible to efficiently regenerate old [cells](#).

"These results are an important step to be able to regenerate diseased tissues in older people," said Bruno de Jesus.

**More information:** Bruno Bernardes de Jesus et al, Silencing of the lncRNA Zeb2-NAT facilitates reprogramming of aged fibroblasts and safeguards stem cell pluripotency, *Nature Communications* (2018). [DOI: 10.1038/s41467-017-01921-6](https://doi.org/10.1038/s41467-017-01921-6)

Provided by Instituto de Medicina Molecular

Citation: Scientists discover molecule that could revert cellular ageing (2018, January 9) retrieved 2 May 2024 from

<https://medicalxpress.com/news/2018-01-scientists-molecule-revert-celular-ageing.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.