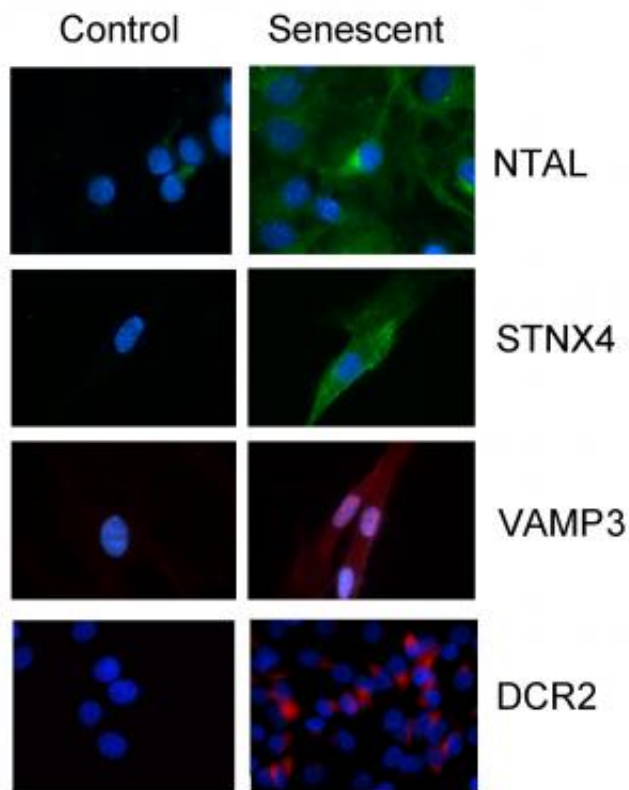


# Study offers future hope for tackling signs of ageing

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Young and old cells exposed to fluorescent antibodies against the novel markers. Old cells can be easily identified because they shine bright under the microscope. Credit: Mohammad Althubiti

A new advance in biomedical research at the University of Leicester could have potential in the future to assist with tackling diseases and conditions associated with ageing – as well as in treating cancer.

The research, which has shown promise in clinical samples, has been published in the prestigious scientific journal, *Cell Death and Disease*.

The group of scientists coordinated by Dr Salvador Macip from the Mechanisms of Cancer and Ageing Lab and the Department of Biochemistry of the University of Leicester carried out the study to find new ways of identifying old cells in the body.

This is important because the accumulation of old cells (called "senescent") in human tissue can contribute to symptoms of ageing. But old cells can also appear as a result of the activation of the internal anti-[cancer](#) mechanisms of the human body.

Dr Macip said: "What we have found is a series of novel markers – a way to detect senescent cells. What is more, we have shown that they can be used to predict increased survival in certain types of cancer.

"Until now, good protocols to help spot these cells have been sadly lacking. Our research has described new markers located on the surface of the old cells. This makes these markers particularly useful to quickly identify these cells in laboratory and human samples using a range of techniques."

As a first clinical application of these markers, the researchers observed that they were present in high numbers in samples from different types of cancer and that this correlated with a better prognosis of the disease. This was particularly evident in [breast cancer](#).

Dr Macip said: "These markers could be useful tools not only to study [senescent cells](#) in the lab but also they could be developed into diagnostics to help predict survival in cancer patients.

"Moreover, they could also be used in the future to define strategies to

selectively eliminate the old [cells](#) from the tissues and thus reduce their effects on promoting ageing in healthy subjects."

**More information:** "Characterization of novel markers of senescence and their prognostic potential in cancer." *Cell Death and Disease* (2014) 5, e1528; [DOI: 10.1038/cddis.2014.489](https://doi.org/10.1038/cddis.2014.489)

Provided by University of Leicester

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