

Searching for keys to cancer resistance in the genome of giant tortoise Lonesome George

An international research team has discovered several variants in tortoise genomes that potentially affect six of the nine hallmarks of ageing. None of the variants has been previously associated with the ageing process.

They also found that giant tortoises have several expanded tumour suppressor genes, as well as alterations in two genes which are known to contribute to cancer.

This was something of a celebrity-tinged genome sequencing, because one of the two tortoises studied was the legendary [Lonesome George](#), the last member of the Galapagos giant tortoise species from Pinta Island (*Chelonoidis abingdoni*). The other was an *Aldabrachelys gigantea* from the island of Aldabra in the Seychelles.

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They hope [their findings](#), which are published in the journal *Nature Ecology & Evolution*, will open fresh research avenues that could lead to an improved understanding of the tortoises' longevity and support conservation efforts.

"Giant tortoises are amongst the longest living animals and therefore must have evolved mechanisms for reducing their risk of developing cancer," says co-author Luciano Beheregaray, from Flinders University in Australia. "Because of that they provide an excellent model to study longevity and age-related diseases."

Lonesome George was discovered in 1971 and from then on lived under protection at the Tortoise Centre on Santa Cruz in the Galapagos. He died of natural causes in 2012.

Read full, original post: [The genome of Lonesome George](#)