

The Life and Death of Cells

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"A model based on statistical mechanics is applied to describe a key factor determining the senescence of biological cells. We may think of built-in obsolescence as a modern marketing trick, but biology got there first. Rather than being able to replicate indefinitely, most cells in our bodies divide only a finite number of times before they switch off. The aging of a cell (senescence) is the process of accumulative changes to its molecular structure that disrupt its function with time, leading to its degradation and death. A key factor in senescence is the shortening of the protective ends of a cell's chromosomes, called telomeres. As reported in Physical Review Letters

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Khanh Dao Duc

and

David Holcman

at Ecole Normale Supérieure, France,

have formulated a statistical mechanics model that describes how this process is regulated,

providing a powerful method for predicting whether cells live or die.

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[Physics](#)

[6](#)

[129](#)

[\(2013\)](#)

For full information,

see:

<http://physics.aps.org/articles/v6/129>

The PRL paper

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<http://prl.aps.org/abstract/PRL/v111/i22/e228104>