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START-UPS

Autophagy: Drugging the yin and yang of the cell

The cellular housecleaning and self-renewal process is implicated in neurodegenerative diseases, cancer, and more. Can biotech companies walk the fine line between boosting and inhibiting autophagy to treat disease without causing it?

by **Ryan Cross**

JUNE 2, 2019 | APPEARED IN **VOLUME 97, ISSUE 22**

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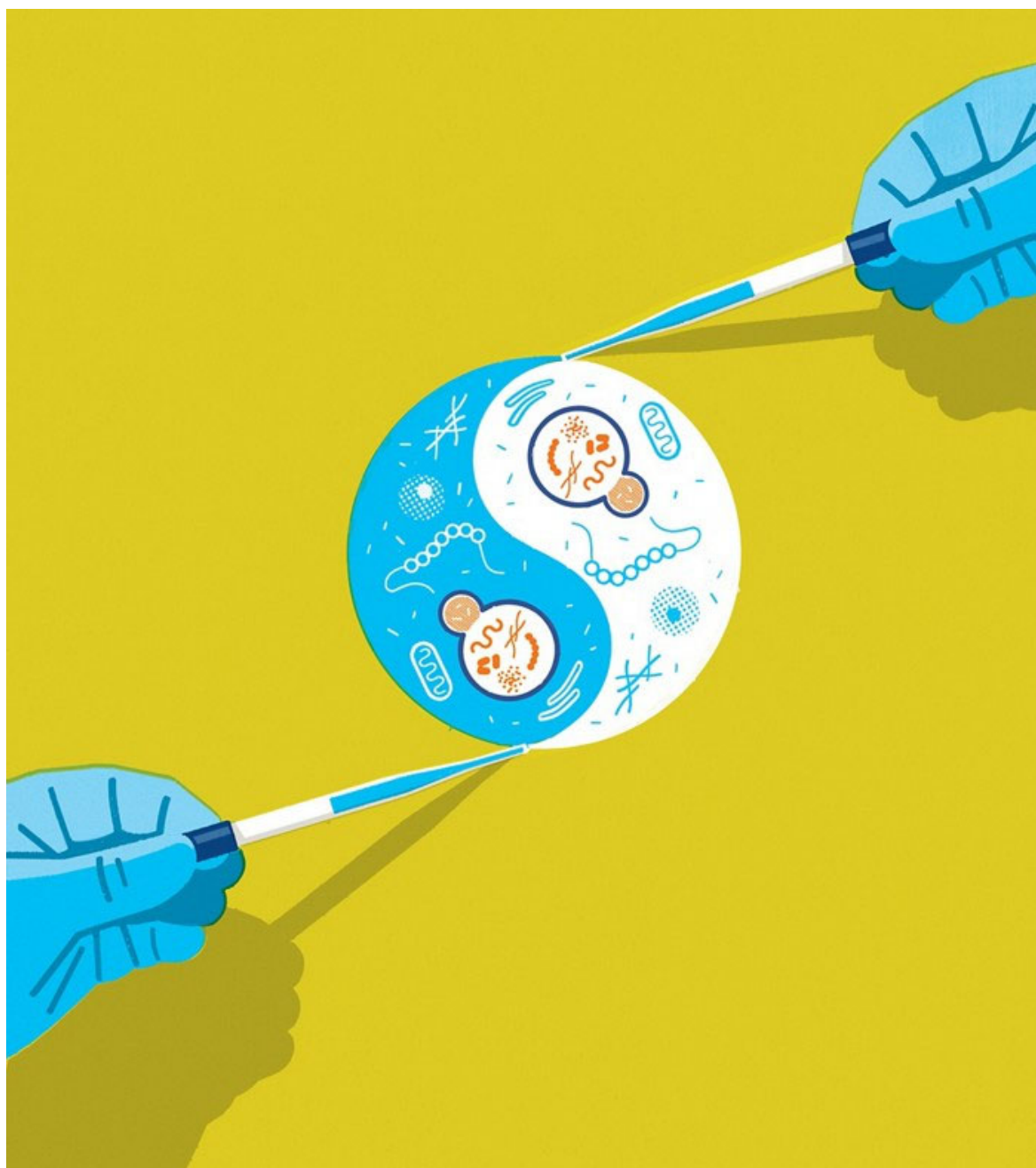
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Credit: Chris Gash

At the beginning of 2017, Keith Dionne was looking for the next big idea in biotech. He had just joined the life sciences-based venture capital firm Third Rock Ventures, and the investors there were building a company centered on the cellular process of autophagy, the subject of the **2016 Nobel Prize in Physiology or Medicine**, announced just months before.

Autophagy literally means self-eating, but the cellular housecleaning it accomplishes is more important than its cannibalistic connotations. Cells build structures

IN BRIEF

Autophagy, the cellular equivalent of housecleaning, is now recognized as a crucial process of self-renewal. After the Nobel Prize was awarded for the discovery of autophagy genes in 2016, several biotech companies launched with plans to develop drugs that either boost or inhibit autophagy

COMMENTS

Crady Kavanaugh

(June 3, 2019 12:45 PM)

Excellent article in keeping with your quality research. As this is intriguing in so many areas of advancement, a friend shared a reference to Anavex Life Sciences Inc which is currently using a Sigma 1 receptor agonist, small molecule A2-73 in clinical trials for Alzheimer's, Parkinson's, and Rett Syndrome - rare disease, all of which are CNS diseases. The mechanism of action of this compound is chaperoned autophagy of damaged mitochondria to prevent protein misfolding. Was recently verified by third party research in Germany and an article appeared in Cells about this biotech's approach. I encourage you to check it out.

Thank you for the balanced and thorough illumination you are shining on this breaking science.

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