

## Cell's waste bins: Lysosomes' role stretches beyond 'trash collector' to importance in gene activity, cancer

In this loftier reckoning of lysosomes, the organelles deftly integrate metabolic information from throughout the cell and communicate it to the nucleus. Like snooping garbage collectors who learn the secrets of all the homeowners on their route, lysosomes gain a uniquely informed perspective on a cell's status by picking through its molecular discards. And some of the finely tuned genetic controls of the nucleus would possibly be pilotless without them.

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The field was once overwhelmingly about lysosomal storage diseases; now...disease investigators mingle freely with those doing basic research. And the focus on deficiencies inside lysosomes had shifted to the lysosomal membrane and the ways in which it enlists TFEB, mTOR and roughly 200 other identified proteins in a conversation with the rest of the cell.

Cancer is one stubborn condition that might yield to a better understanding of lysosomes. Because cancer cells need plenty of nutrients to grow, "they have to reprogram or rewire their stomachs — their lysosomes — to take in and process a lot of food," said Perera, a cancer biologist at the University of California, San Francisco.

**The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: [The Secret Power of the Cell's Waste Bin](#)**

**For more background on the Genetic Literacy Project, read [GLP on Wikipedia](#)**