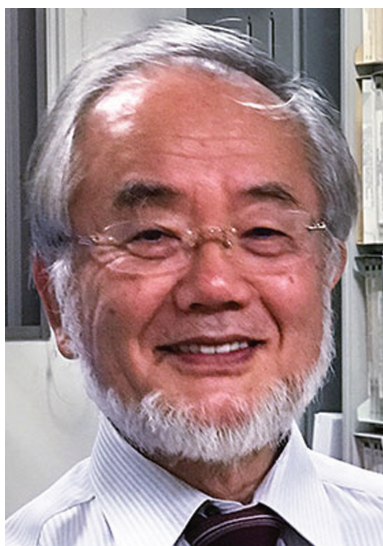




NEWS

THE NOBEL PRIZE IN PHYSIOLOGY OR MEDICINE 2016



Yoshinori Ohsumi

(Born in 1945, Fukuoka, Japan)

*Tokyo Institute of Technology,
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The Nobel Prize in Physiology or Medicine 2016 was awarded to **Yoshinori Ohsumi** "for his discoveries of mechanisms for autophagy".

This year's Nobel Laureate discovered and elucidated mechanisms underlying autophagy, a fundamental process for degrading and recycling cellular components.

The word *autophagy* originates from the Greek words *auto-*, meaning "self", and *phagein*, meaning "to eat". Thus, autophagy denotes "self eating". This concept emerged during the 1960's, when researchers first observed that the cell could destroy its own contents by enclosing it in membranes, forming sack-like vesicles that were transported to a recycling compartment, called the *lysosome*, for degrada-

tion. Difficulties in studying the phenomenon meant that little was known until, in a series of brilliant experiments in the early 1990's, Yoshinori Ohsumi used baker's yeast to identify genes essential for autophagy. He then went on to elucidate the underlying mechanisms for autophagy in yeast and showed that similar sophisticated machinery is used in our cells.

Ohsumi's discoveries led to a new paradigm in our understanding of how the cell recycles its content. His discoveries opened the path to understanding the fundamental importance of autophagy in many physiological processes, such as in the adaptation to starvation or response to infection. Mutations in autophagy genes can cause disease, and the autophagic process is involved in several conditions including cancer and neurological disease.

http://www.nobelprize.org/nobel_prizes/medicine/laureates/2016/