OIST OKINAWA INSTITUTE OF SCIENCE AND TECHNOLOGY GRADUATE UNIVERSITY

Molecular Cryo-Electron Microscopy Unit

【Seminar】Controlling Proteins and Organelles with Zapalog and Light

https://www.nature.com/articles/s41556-019-0317-2

Date: Tuesday, May 14, 2019

Time: 1 5 : 0 0 - 1 6 : 0 0

C210 (Center Bldg, Level C)

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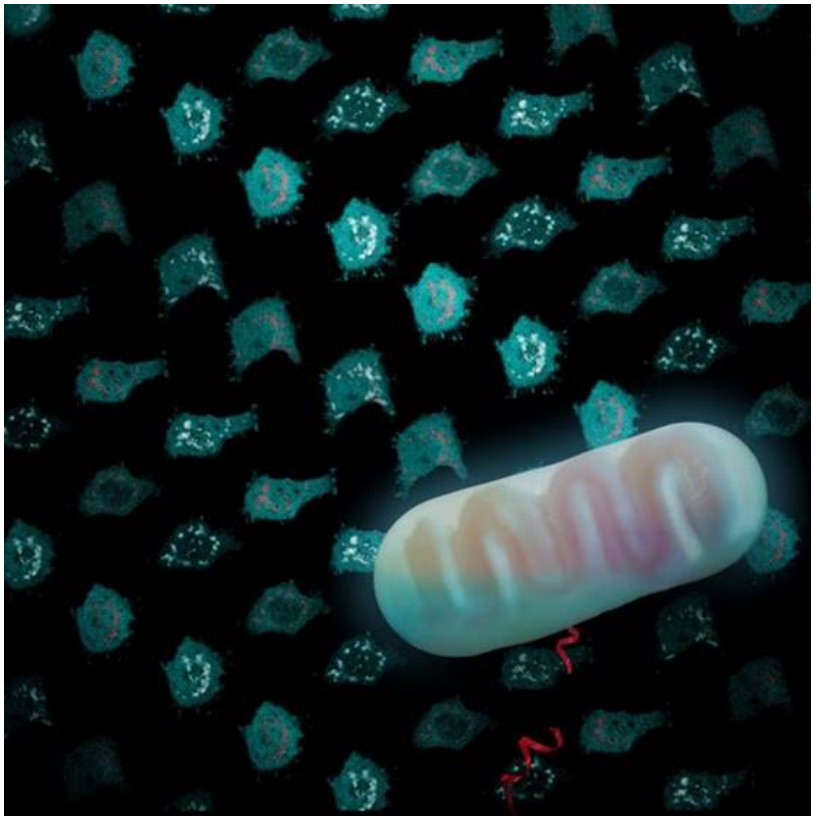
Abstract

We have developed ZAPALOG, a novel small-molecule dimerizer that undergoes photolysis when exposed to blue light. We demonstrate the effectiveness and versatility of this methods for molecular cell biology, and implement this method in cultured neurons to shed new light on the nature of mitochondrial motility and positioning in axons. We find that one third of stationary mitochondria cannot be pulled away from their position along the axon and that these "immovable" mitochondria preferentially localize to presynaptic sites. Furthermore, inhibition of actin polymerization reduces this anchored, immovable pool. Finally, we find that upon release from exogenous motors, mitochondria are preferentially recaptured at these presynaptic loci.



(Wolf Unit)