

Research seminar

Visualization of energy status of each single yeast cell

Dr. Satoshi Yoshida

Gunma University

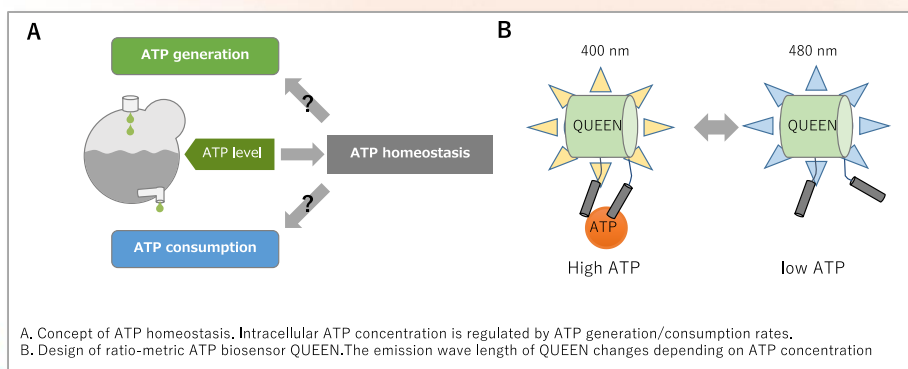
Initiative for Advanced Research

酵母1細胞のエネルギー状態の視覚化

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ATP (adenosine triphosphate) is an essential source of chemical energy used for almost all living matters and often referred as the molecular unit of currency. In addition to the synthesis of macromolecules within a cell, ATP is also required for degradation and regulation of cellular compartments. We are interested in molecular mechanisms by which cells maintain ATP concentration in various nutritional and/or stressed conditions.

To monitor the energy status of each single cell, we have optimized and applied an ATP-biosensor QUEEN in yeast. We found that cellular ATP concentration has little variation among clonal yeast population and is stably maintained throughout the cell cycle, suggesting a possible feedback mechanism that co-ordinates the rate of ATP synthesis and consumption. We also found that stable maintenance of ATP concentration is independent of energy source such as glycolysis or respiration. We will discuss possible mechanisms for maintaining homeostasis of cellular energy status.



Nov. 15, 2017 (Wed)

3:00 PM start @ L12

11月15日(水)

午後3時開始@L12教室

ご参加ください~!

[Organizer]

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