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Single-cell analysis of TORC1 and PKA signalling during the budding yeast cell cycle

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Propositions

- 1) The activity of the TORC1 and PKA pathway oscillates in coordination with the cell cycle (Chapter 2).
- 2) The oscillating activity of TORC1 and PKA is connected to metabolism and the activity of the cell cycle machinery (Chapter 2 and Chapter 3).
- 3) TORC1 and PKA are not only important in response to changing external signals but are also strongly linked to cell cycle-dependent processes, such as metabolism and the regulation of cell growth during the cell cycle (Chapter 2 and Chapter 3).
- 4) Studying the bidirectional interactions between metabolism, growth-controlling pathways and the cell cycle machinery will be crucial to fully understand key aspects of cell physiology, such as the emergence of cell size homeostasis (Chapter 3 and Chapter 5)
- 5) Single-cell analysis is essential for studying cellular processes during the cell cycle. Developing tools for single-cell measurements and perturbations is an integral part of this approach (this thesis).
- 6) If we knew what we were doing, it would not be called research, would it? (attributed to Albert Einstein)