Synthetic Biology of Yeast

With the rapid development of DNA synthesis and next-generation sequencing, synthetic biology that aims to standardize, modularize, and innovate cellular functions, has achieved vast progress. Here we review key advances in synthetic biology of the yeast Saccharomyces cerevisiae, which serves as an important eukaryal model organism and widely applied cell factory. This covers the development of new building blocks, i.e., promoters, terminators and enzymes, pathway engineering, tools developments, and gene circuits utilization. We will also summarize impacts of synthetic biology on both basic and applied biology, and end with further directions for advancing synthetic biology in yeast.

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