

A Quantitative Survey of the Growth Dependent *Escherichia coli* Proteome

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March 24, 2020

1 Introduction

Points to emphasize

- The past decade of work in proteomics has made high-throughput absolute measurement of protein abundance a reality. Recent groups have used mass spectrometry and ribosomal profiling to quantify growth-dependent effects on protein copy numbers across growth conditions. In this work, we assemble four recent datasets that examine how cellular proteome is influenced by the total growth rate.

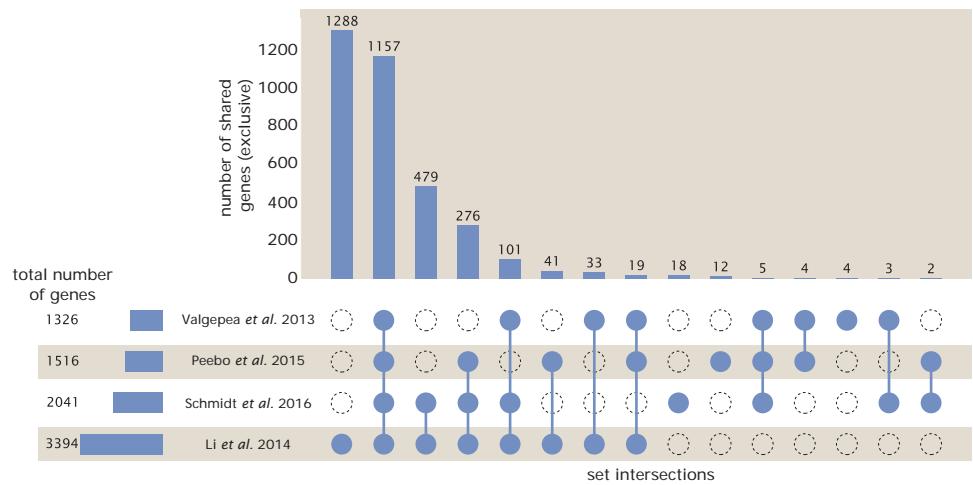


Figure 1: Summary of the compiled datasets.

2 A comprehensive examination of the *E. coli* proteome

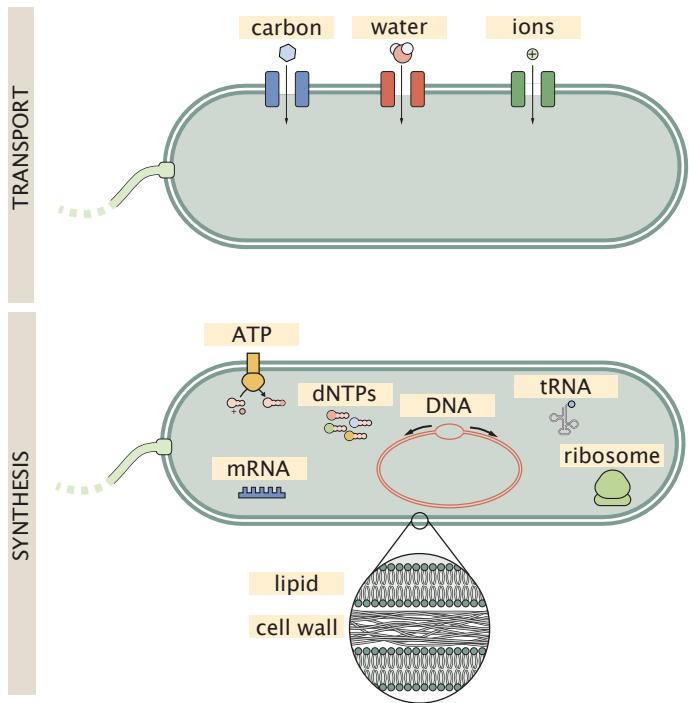


Figure 2: Potential bottlenecks for bacterial growth.

3 What sets the speed limit of *E. coli* growth?

- 3.1 Transport
- 3.2 DNA Synthesis
- 3.3 RNA Synthesis
- 3.4 ATP Synthesis
- 3.5 Lipid and Cell Wall Synthesis
- 3.6 Protein, tRNA, and Ribosome Synthesis

