*Supplementary Material*

# Multifaceted stoichiometry control of bacterial operons revealed by deep proteome quantification

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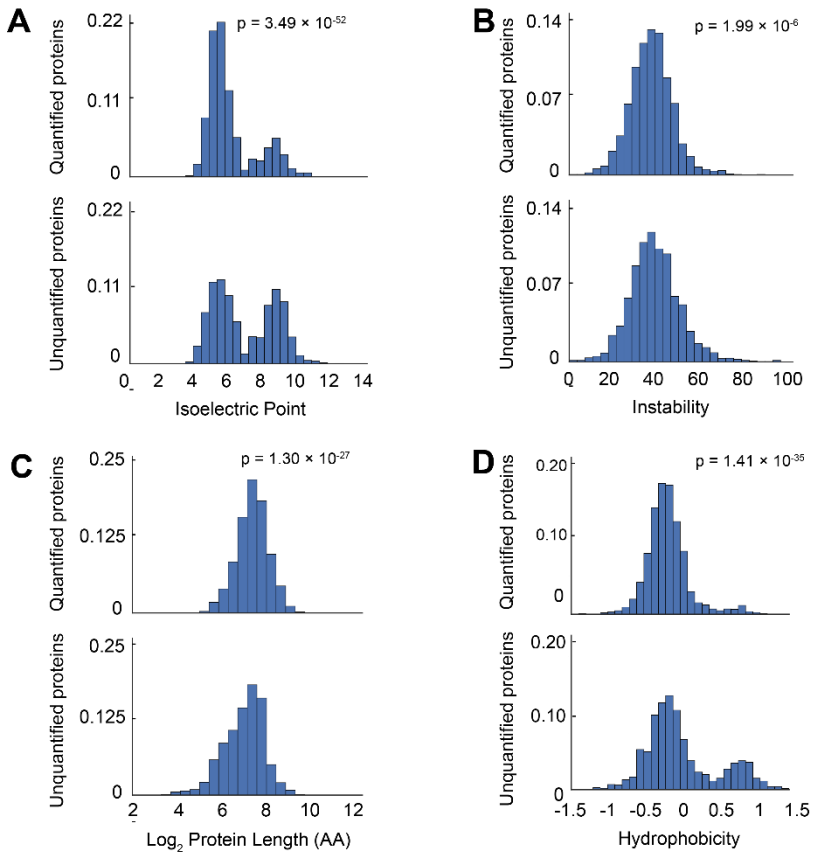
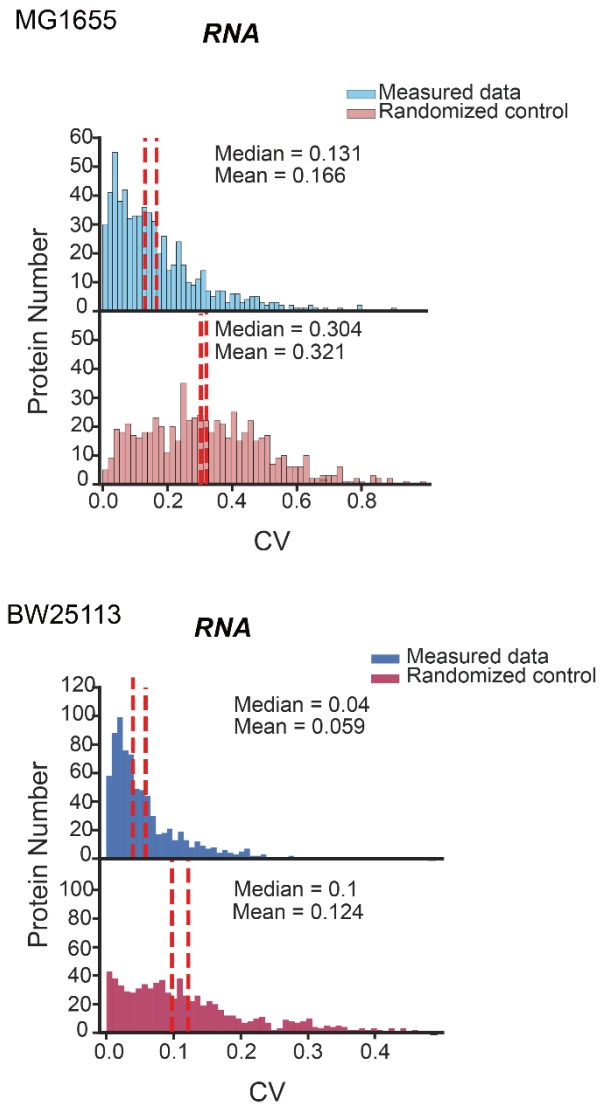
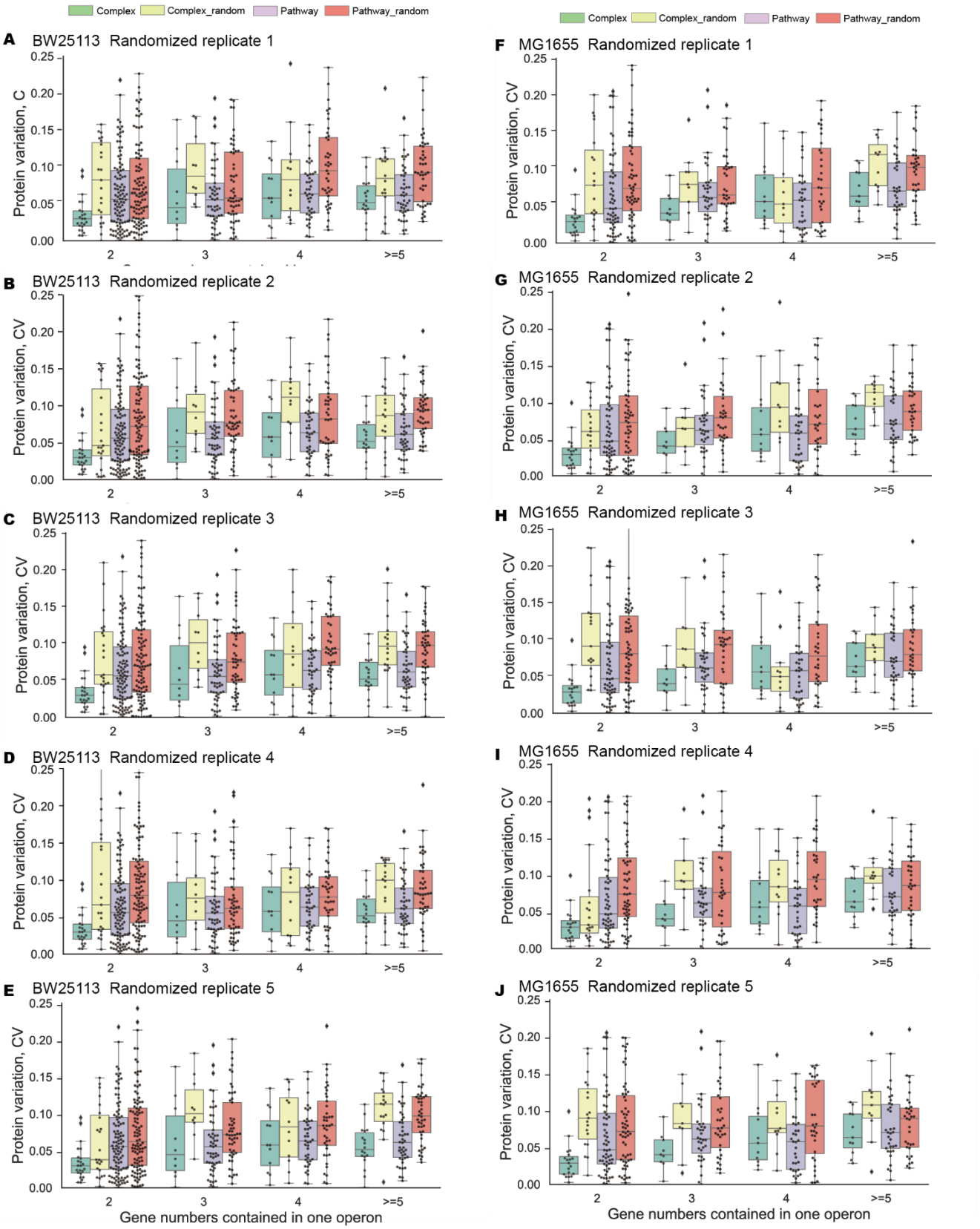



**Supplementary Figure S1. Physical and chemical features of quantified and unquantified proteins in *E. coli.*** (A-D) are distributions of protein isoelectric point, instability, protein length, and hydrophobicity. Instability tests a protein for stability, which value above 40 means the protein has a short half-life [1]. The Kolmogorov−Smirnov test (KS-test) was used to test the distribution between quantified and unquantified proteins. Significance different were found between quantified and unquantified proteins indicated different physical−chemical characterizations of them.

[1]. Guruprasad, K., B.V. Reddy and M.W. Pandit, Correlation between stability of a protein and its dipeptide composition: a novel approach for predicting in vivo stability of a protein from its primary sequence. Protein Eng, 1990. 4(2): p. 155-61.

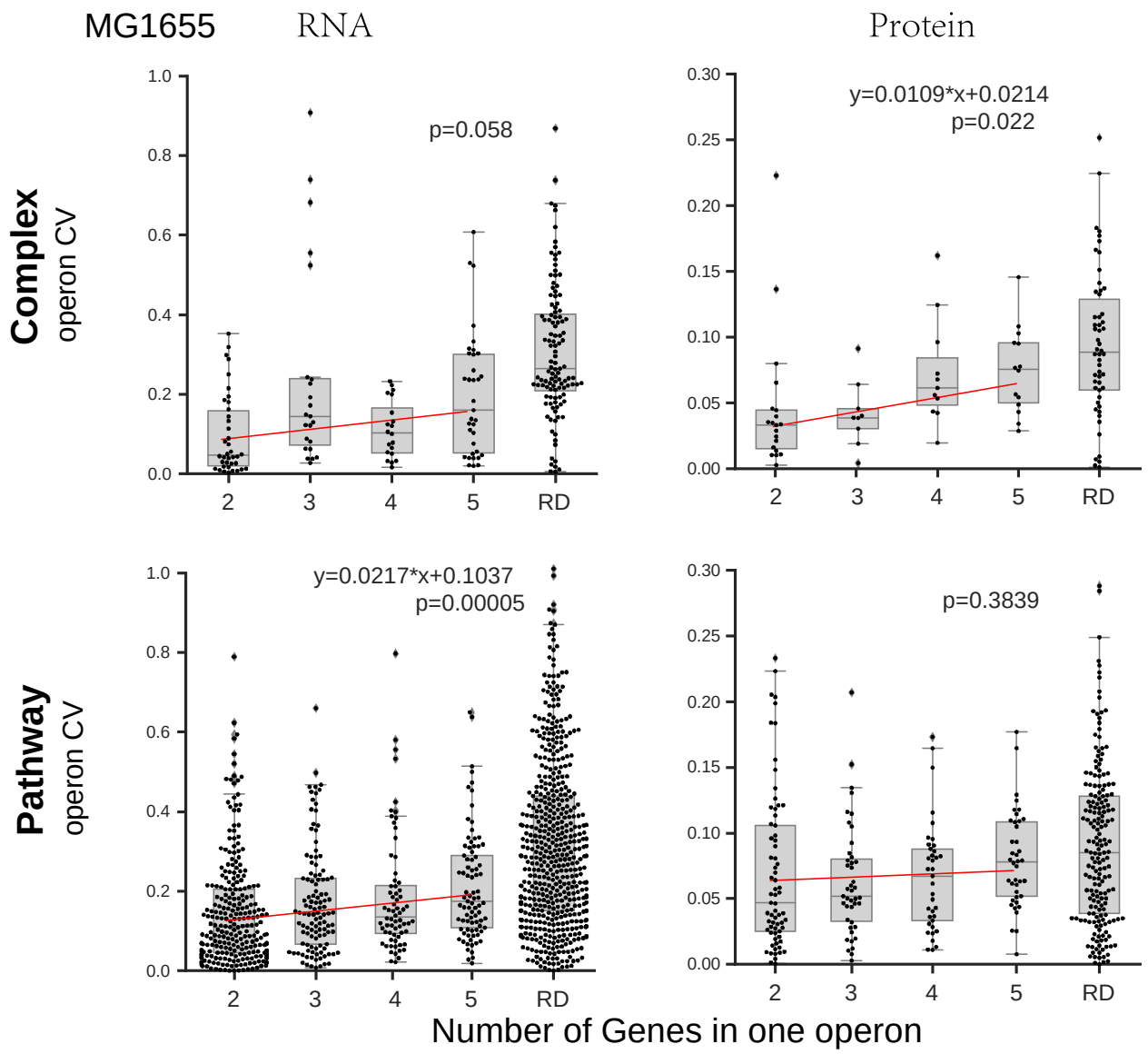



**Supplementary Fig. S2:** CV within operons of measured data and randomized negative control at RNA level.

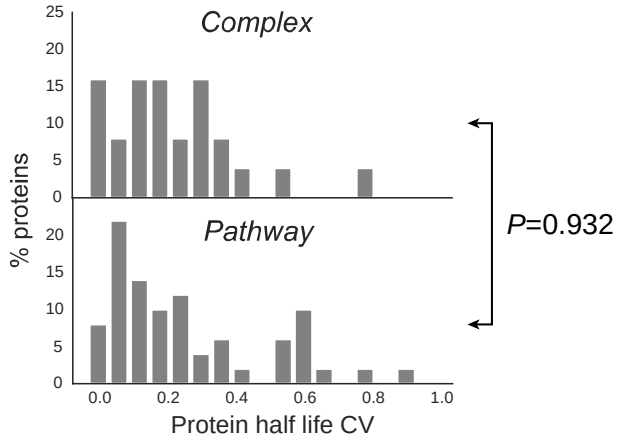



**Supplementary Figure S3. Length- and functional-dependence of operon-wise stoichiometry control compare to randomized data. (A-E)** Distribution among "Complex", "Complex_random", "Pathway" and

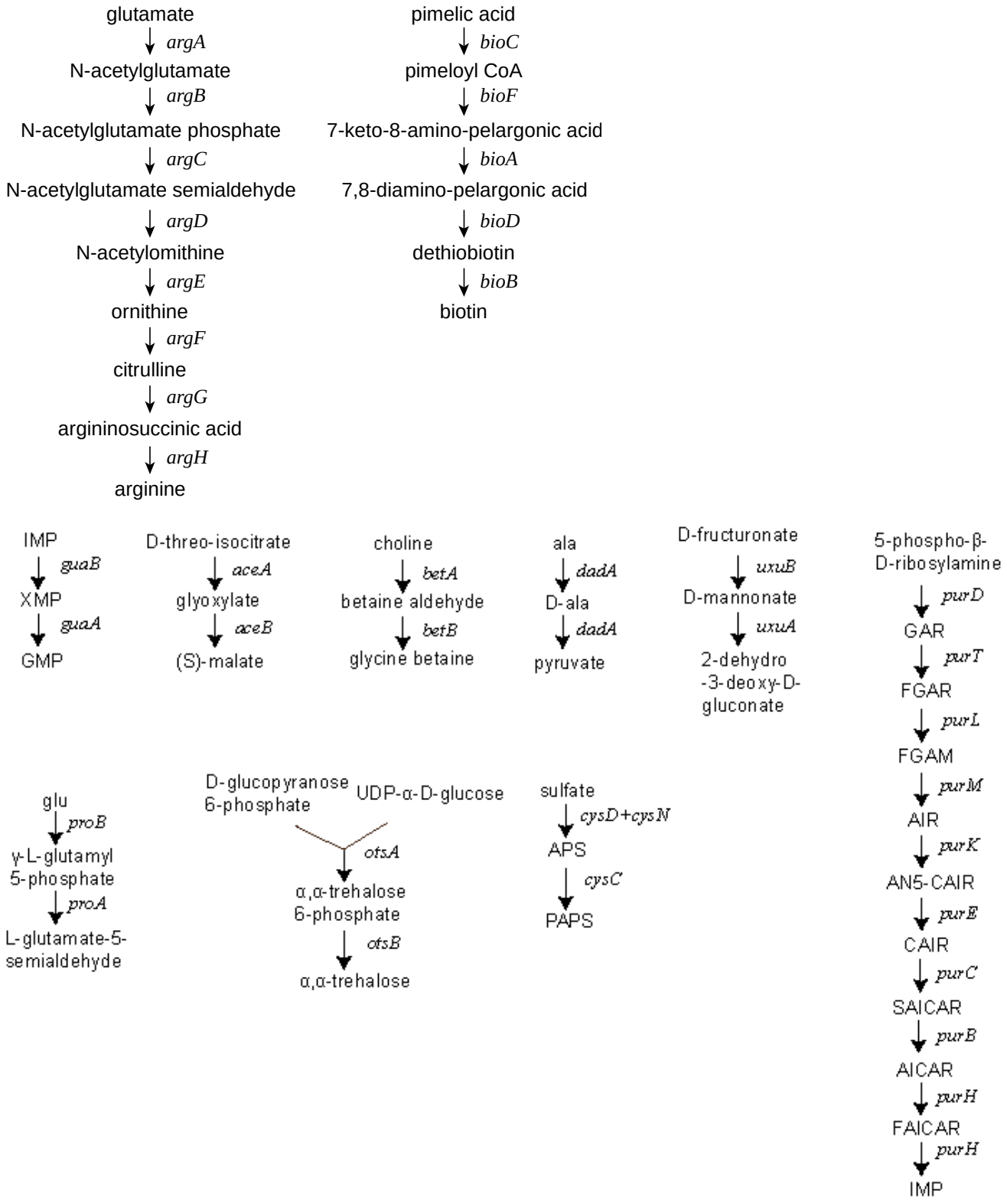
"Pathway_random" groups in BW25113. **(F-J)** Distribution among "Complex", "Complex_random", "Pathway", "Pathway_random" groups in MG1655. In most cases, the CV in "Complex" and "Pathway" groups were lower than corresponding "Complex_random" and "Pathway_random" groups in both strains, indicating real robust signals but not statistical artefacts in operons present in *E. coli.*

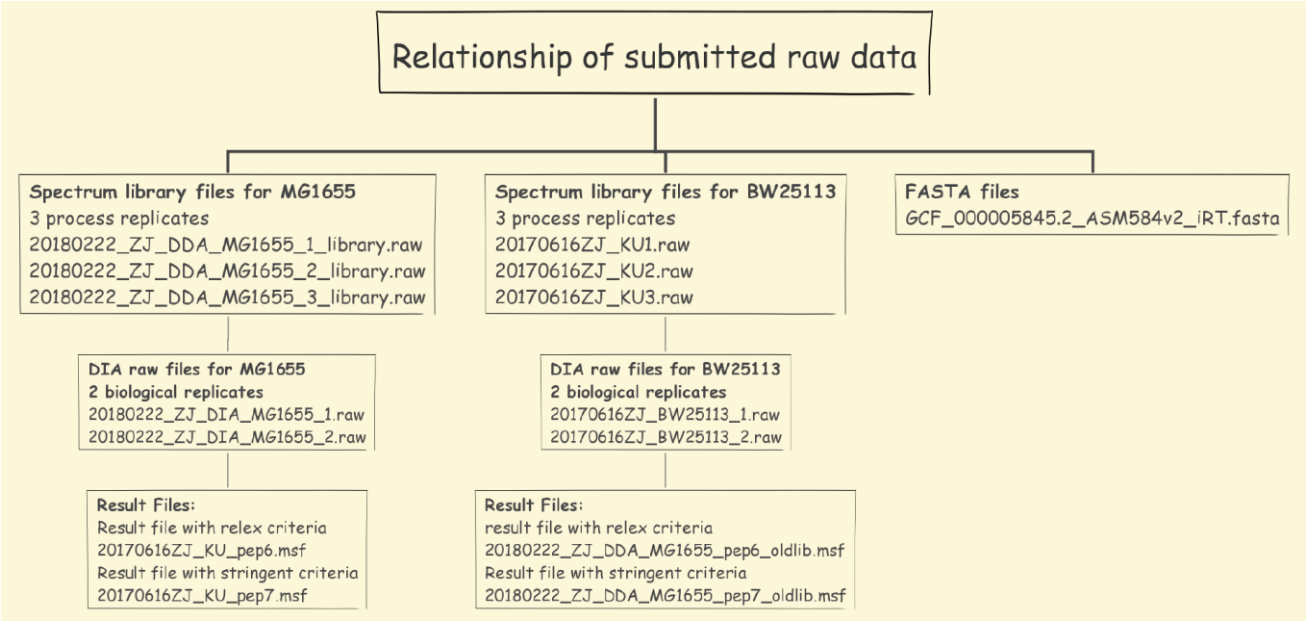



**Supplementary Figure S4**: Length dependence of the stoichiometry control at RNA and protein levels. Same figure in MG1655 strain, comparable to the Figure 4A.




**Supplementary Figure S5**: Distribution of protein half-life CV in “complex” and “pathway” operons.




**Supplementary Figure S6**: Pathways in Figure 5.

**Supplementary data|** The relationship of submitted raw data