

## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: Reactions, components, and vesicle stoichiometry used in mammalian secretory pathway reconstructions

File Name: Supplementary Data 2

Description: Protein Specific Information Matrices (PSIM) of human, mouse, and Chinese hamster

File Name: Supplementary Data 3

Description: Experimental data and IgG amino acid compositions used to constrain iCHO2048s

File Name: Supplementary Data 4

Description: In silico assessment of CHO cell productivity improvements upon host gene deletions