



Figure S2 (A) This heatmap matrix shows the number of reactions used in all MBPs in the R_{19} network. Each element (i, j) shows the length of the shortest path from a_i to a_j , not counting the transport reactions to allow entry of a_i or exit of a_j . For example, element $(1, 1)$ ($a_1 \Rightarrow a_1$) requires 0 reactions, while $(1, 19)$ ($a_1 \Rightarrow a_{19}$) requires 6 for a minimal pathway. (B) This heatmap shows how many MBPs with an equal number of reactions were calculated in the R_{10} network using the EFM method. Each element (i, j) shows how many MBPs exist to convert a_i to a_j . For example, There is only one path to convert a_1 to a_2 , but 25 that convert from a_7 to a_9 .