



**Figure S2.** Distribution of individual reactions in secondary reactions. As seen in Figure 1C-D, each secondary reaction represents one or more intermediate reactions in a metabolic pathway that connects two metabolites in a GENSOR unit. A total of 144 secondary reactions were added to 48 GENSOR units. The x axis shows the number of intermediate reactions. The y axis shows the percentage of secondary reactions added via x number of intermediate reactions. Almost 50% of secondary reactions included only one intermediate reaction.