

Supplementary Figure 1. *The aerobic cell growth of the evolutionary engineered strain of SXA-R2P-E on xylose.* The evolutionary engineering improved the aerobic cell growth of the strain harboring a xylose isomerase-based pathway on xylose. The evolved strain of *SXA-R2P-E* (black) reached stationary growth phase faster than the rationally engineered strain of *SXA-R2P* (grey). Error bars represent the standard deviation of biological triplicates.

