

Description of Additional Supplementary Files

Supplementary Data 1: List of parameters included in uncertainty and sensitivity analyses for the dextrose scenario, and parameters for the corn, sugarcane, and corn stover scenarios changed relative to the dextrose scenario. Note all chemical prices were converted to the TEA year, 2019.

Supplementary Data 2: Primers used in this study.

Supplementary Data 3: *PAND* candidates tested in this study.

Supplementary Data 4: *BAPAT* candidates tested in this study.

Supplementary Data 5: *YDGF* candidates tested in this study.

Supplementary Data 6: Metabolites and reactions added to iIsor850 enabling biosynthetic pathways that produce 3-hydroxypropionic acid from pyruvate.

Supplementary Data 7: List of major units and equipment included in the designed and simulated 3HP biomanufacturing facilities.

Supplementary Data 8: Baseline system reports.