Supplementary Materials

Production of D-lactate from avocado seed hydrolysates by metabolically engineered *Escherichia coli* JU15

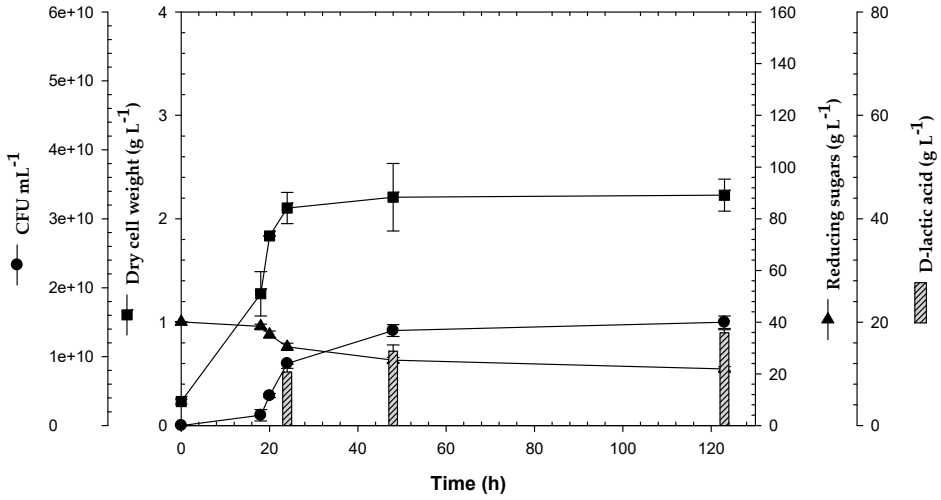

Figure S1: Kinetic of *Escherichia coli* JU15 in bioreactor at 40 g L^{-1} initial reducing sugars, 200 rpm, 37 °C, and pH 6.6.

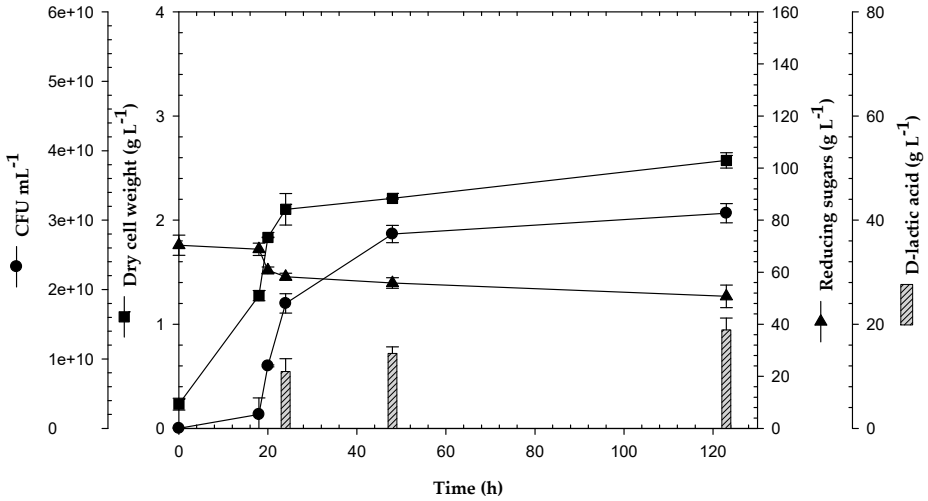

Figure S2: Kinetic of *Escherichia coli* JU15 in bioreactor at 70 g L^{-1} initial reducing sugars, 200 rpm, 37 °C, and pH 6.6.

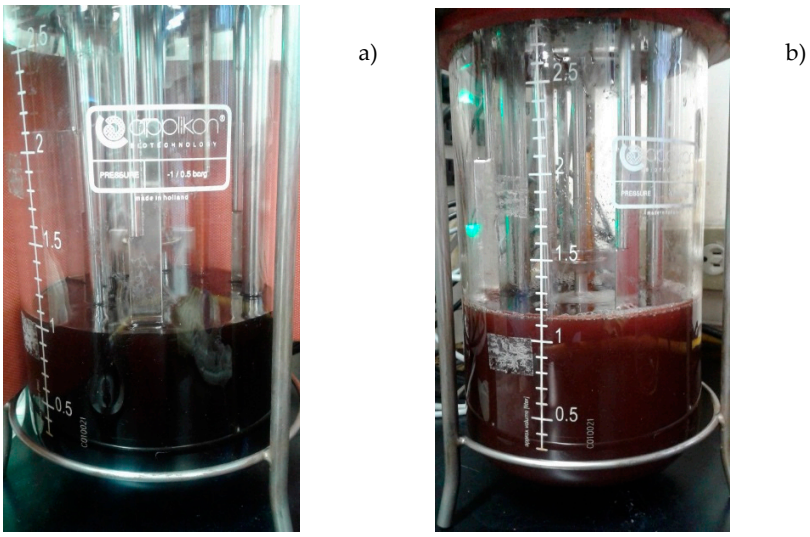

Figure S3: Photography of the bioreactor before and after the fermentation. a) with ASH sterile medium previous the fermentation. b) with the ASH based medium after grown of *Escherichia coli* JU15 for 72 hours.

Purification of D-lactate

After completing the fermentation process, approximately 4 days later on, D-lactate was purified following the process reported by Benthin and Villadsen (1995) by using a solution of $MgCl_2*6H_2O$ until the evaporation of the medium. The solution was extracted with butanol, and subsequently, the extraction of lactic acid was carried out in two consecutive steps: (a) its extraction from the aqueous solution as magnesium lactate into a butanol phase as free acid and, (b) a back-extraction to aqueous solution as sodium lactate.

Reference:

1. Benthin S, Villadsen J (1995) Production of optically pure D-lactate by *Lactobacillus bulgaricus* and purification by crystallization and liquid/liquid extraction. Appl. Microbial. Biotechnol. 42, 826-829.

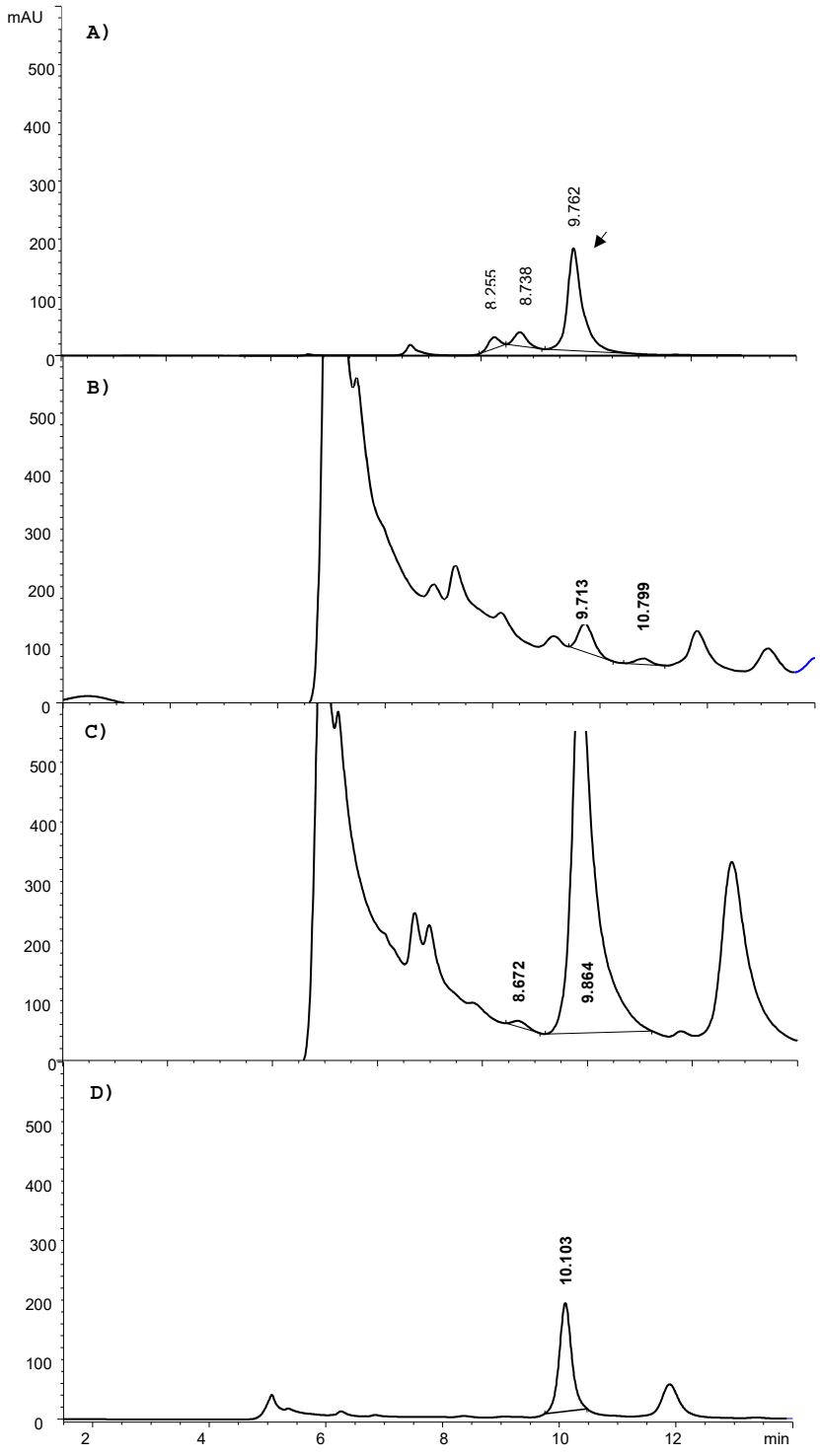

Figure S4. HPLC profiles on lactic acid production. (a) standard of lactic acid, (b) ASH medium alone (previous the fermentation occurred), (c) 96 h-fermentation sample and, (d) a purified sample of lactic acid. The lactic acid peak is identified by its retention time to around 9.9 min.