## Table 3 results

### Max and min ppi production calculations

These results are calculated using the run\_FBA\_ctherm\_STRAIN\_min\_PPi and run\_FBA\_ctherm\_STRAIN\_max\_PPi programs. The programs sets a rates of a few reactions as well as biomass production to simulate the strain knock-out, sets a cellobiose intake of 1 g cellobiose·gDW-1·h-1 . It then runs a FBA in the max or min direction over all PPi producing reactions and optimize the solution. The solutions are written in a document it gives the rate of every reaction at lower bound, level and upper bound and the addition of all PPi production and consuming reactions value reported in the table

### PPi production at max ethanol production

Use pFBA ppi tracking code run\_pFBA\_ctherm\_STRAIN\_ppi\_tracking, it knockouts the strain by fixing reactions rate to 0, set the biomass production and cellobiose uptake then put the reaction of ethanol exchange as objective run the pFBA with direction max and like the precedent adds all PPi productions and consumptions at the rates calculated by the pFBA to get the final value.

### Max ethanol yield at max and min PPi production and acetate yield

Using the results of maximum PPi production, they set the rates of PPi producting and consuming reactions, from the list specific to this strain that are not 0 in the FBA results to either the max or min PPi configuration. They then run an FBA with ethanol exchange reaction as objective reaction to maximise run\_FBA\_ctherm\_STRAIN\_at\_max(min)\_ppi. The results gives the flux of ethanol and other reactions to obtain the yield you simply need to divide the flux by the intake of cellobiose which is 1 g cellobiose·gDW-1·h-1 or 2.92144383597262 mmol cellobiose·gDW-1·h-1. The flux of ethanol is given as the objective value and the flux of acetate is given as the level of acetate exchange reaction “EXCH\_ac\_e”. The max values are taken from the pFBA results of yield tracking used for figure 2 run\_pFBA\_ctherm\_STRAIN\_yield\_tracking.