| Strain     | Plasmid                          | Expressed genes | Growth Rate | Medium |
|------------|----------------------------------|-----------------|-------------|--------|
| E. coli BW25113-T7 | pET-ALA-LAA                   | hemA, hemL, eamA | 0.249       | LB     |
| E. coli XD    | pET-ALA-LAA + pUC-gltX-gltD     | hemA, hemL, eamA, gltX, gltD | 0.203       | LB     |
| E. coli BX    | pET-ALA-LAA + pUC-gltB-gltX     | hemA, hemL, eamA, gltB, gltX | 0.195       | LB     |
| E. coli BD    | pET-ALA-LAA + pUC-gltB-gltD     | hemA, hemL, eamA, gltB, gltD | 0.180       | LB     |
| E. coli BDX   | pET-ALA-LAA + pUC-gltB-gltX-gltL | hemA, hemL, eamA, gltB, gltD, gltX | 0.177       | LB     |

Table S1. Growth rate of strain expressing various related genes in different medium