Figure S1 Reporter assays of the effect of potential proteins on the activity of the \textit{P但是在E} promoter.
Table S1 The obtained peptide mass patterns analyzed by MASCOT 2.2 software

| Protein | No. | Reference | Pep Count | Unique Pep Count | Cover Percent (%) |
|---------|-----|-----------|-----------|------------------|-------------------|
| GntR    | 1   | regulator GntR OS=Escherichia coli (strain K12) GN=gntR PE=1 SV=1 | 1 | 1 | 2.42 |
|         | 2   | tr|A0A0D6K793|A0A0D6K793_ECOLI DNA-binding transcriptional repressor OS=Escherichia coli (strain K12) GN=gntR PE=4 SV=1 | 1 | 1 | 2.42 |
| RdgC    | 1   | sp|B1XEY2|RDGC_ECODH Recombination-associated protein RdgC OS=Escherichia coli (strain K12 /DH10B) GN=rdgC PE=3 SV=1 | 12 | 12 | 32.34 |
|         | 2   | sp|C4ZTF1|RDGC_ECOBW Recombination-associated protein RdgC OS=Escherichia coli (strain K12 /MC4100 / BW2952) GN=rdgC PE=3 SV=1 | 12 | 12 | 32.34 |
|         | 3   | tr|A0A0D6JYH1|A0A0D6JYH1_ECOLI Nucleoid-associated ssDNA and dsDNA binding protein competitive inhibitor of RecA function OS=Escherichia coli (strain K12) GN=rdgC PE=4 SV=1 | 12 | 12 | 32.34 |
|         | 4   | sp|P36767|RDGC_ECOLI Recombination-associated protein RdgC OS=Escherichia coli (strain K12) GN=rdgC PE=1 SV=1 | 12 | 12 | 32.34 |
| UidR    | 1   | tr|A0A0D6K2E9|A0A0D6K2E9_ECOLI DNA-binding transcriptional repressor OS=Escherichia coli (strain K12) GN=uidR PE=4 SV=1 | 1 | 1 | 5.61 |
|         | 2   | sp|P0ACT6|UIDR_ECOLI HTH-type transcriptional regulator UidR OS=Escherichia coli (strain K12) GN=uidR PE=3 SV=1 | 1 | 1 | 5.61 |
| SeqA    | 1   | sp|P0AFY8|SEQA_ECOLI Negative modulator of initiation of replication OS=Escherichia coli (strain K12) GN=seqA PE=1 SV=1 | 96 | 9 | 54.70 |
|         | 2   | tr|A0A0D6K004|A0A0D6K004_ECOLI Regulatory protein for replication initiation OS=Escherichia coli (strain K12) GN=seqA PE=4 SV=1 | 96 | 9 | 54.70 |
| Dps     | 1   | sp|B1X7E2|DPS_ECODH DNA protection during starvation protein OS=Escherichia coli (strain K12 /DH10B) GN=dps PE=3 SV=1 | 5 | 4 | 31.74 |
|   | Gene Accession | Gene ID | Description                                                                 | Organism                      | Protein Description                           | Protein Database Accession | Protein Database ID | PS50 | PS100 |
|---|----------------|---------|-----------------------------------------------------------------------------|-------------------------------|-----------------------------------------------|----------------------------|---------------------|------|-------|
| 2 | tr|A0A0D6K0D7|A0A0D6K0D7_ECOLI              Fe-binding and storage protein stress-inducible DNA-binding protein | OS=Escherichia coli (strain K12) | GN=dps PE=4 SV=1 |                                |                          | 5    | 4     | 31.74 |
| 3 | sp|P0ABT2|DPS_ECOLI                        DNA protection during starvation protein | OS=Escherichia coli (strain K12) | GN=dps PE=1 SV=2 |                                |                          | 5    | 4     | 31.74 |
| 4 | sp|C4ZXY4|DPS_ECOBW                        DNA protection during starvation protein | OS=Escherichia coli (strain K12 / MC4100 / BW2952) | GN=dps PE=3 SV=1 |                                |                          | 5    | 4     | 31.74 |
|   | tr|A0A0D6K1T0|A0A0D6K1T0_ECOLI              Qin prophage predicted regulator for DicB | OS=Escherichia coli (strain K12) | GN=dicA PE=4 SV=1 |                                |                          | 1    | 1     | 5.19  |
|   | sp|P06966|DICA_ECOLI                        HTH-type transcriptional regulator | OS=Escherichia coli (strain K12) | GN=dicA PE=3 SV=1 |                                |                          | 1    | 1     | 5.19  |
|   | tr|A0A0D6JZZ9|A0A0D6JZZ9_ECOLI              DNA-binding transcriptional dual regulator of siderophore biosynthesis and transport | OS=Escherichia coli (strain K12) | GN=fur PE=4 SV=1 |                                |                          | 1    | 1     | 8.78  |
|   | sp|P0A9A9|FUR_ECOLI                         Ferric uptake regulation protein | OS=Escherichia coli (strain K12) | GN=fur PE=1 SV=1 |                                |                          | 1    | 1     | 8.78  |