**Supplementary File 2**

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| --- | --- |
| **Name** | **Sequence** |
| AB\_Marker\_F | GAGGGAGGAAAGGCAGGA |
| AB\_Marker\_R | CGCCGTATCTGTGCTCTC |
| BgaA\_5FLANK\_F | CCTACATTTGATGACCTTCTTAACGCC |
| BgaA\_5FLANK\_R | AACTTCGTCAGTGTCGCCTTGC |
| *bgaA*\_FLANK\_F | GTTGCTACTAAACGTCTTCAAGGACG |
| *bgaA*\_FLANK\_R | CGCCAAACTTCAAGAACAGATACAGG |
| pLEM023\_F | CACGATTACTTGGGGATCTCCCCGCGAAAGCGGG |
| pLEM023\_R | TCCTGCCTTTCCTCCCTCGTCATACCATGTATACCACTTGG |
| *whyD*\_5F\_F | GCT CAAGCAGCGC ATACCCTCAA TCTCCCAGTC TTAGTCATCC |
| *whyD\_*5F\_R | TCCTGCCTTTCCTCCCTCAGGCACTCCTAGTCAAATAATTGAGACAAGTCCAAGCCACCAAAAGG |
| *whyD*\_3F\_F | GAGAGCACAGATACGGCGGCATTGGAATTCTTTGAATTTtagTAATAAAAAAGAGG |
| *whyD*\_3F\_R | CCAAGGCAGCCCAGCCTTCACAGACTCTACTGC |
| *whyD*\_5F\_SEQ | CGCAACAACCGCTTTATTTCGAATCAGACA |
| oSp95 | gccctcatcggaatacagac |
| oSp98 | ctgaagaatgtaaatggtgttaacttcgac |
| *lytA*\_F\_purification\_NdeI | GCCCATATGGAAATTAATGTGAGTAAATTAAGAACAGATTTGCC |
| *lytA*\_R\_purification\_HindIII | GCCAAGCTTttaTTTTACTGTAATCAAGCCATCTGGCTCTACTGTGAATTCTGG |
| *whyD*\_CTERM\_BAMHI\_F\_PTD68 | GGCGGATCCGTTC ATCTACCTCA ACTTATTTCTCACCGAGGGG TTTCCAATGC AAATGGGATT CAAAATACAG TAGAGTCC |
| *whyD*\_CTERM\_xhoI R\_PTD68 | CCGCTCGAGctaAAATTCAAAGAATTCCAATGCTTTTTTCAAGAGCAAATCCGTATATTCTGGATCTTCTTGGGCTACTTCTATTTCCCG |
| *lytA*\_F\_nativeRBS\_XhoI\_F | TATCTCGAGTAATCGTGACTAAGATTGTCTTCTTTGTAAGG |
| *lytA*\_F\_BamHI\_R | ataGGATCCCCTAATAATATGCGCTGTTCTGATTTGAAAGACATTCC |
| oGD267 | ggtgttcataaatctattataactcgagacaTAAGGAGGaactactatgagtaaaggagaagaac |
| oGD268 | tttgtatagttcatccatgccatgtg |
| oGD369 | cacatggcatggatgaactatacaaaCCTATGAAACCTGAAAAACCTAAAAAATTGGGTC |
| oGD270 | gcggggtttttttttggatccctaAAATTCAAAGAATTCCAATGC |
| oGD391 | GAATTCatAAGCTTgtCTCGAGtgctcgaagatttcagc |
| oGD392 (PF6- | gttcttctcctttactcattaattttcctccttatttatttagatcc |
| oGD67 | atgagtaaaggagaagaacttttcac |
| oGD193 | CCCGCTTCGGCGGGGTTTTTTTTTGGATCCttatttgtatagttcatccatg |
| *whyD*\_optRBS\_ATG\_F\_xhoI | TATCTCGAGacaTAAGGAGGaactactATGAAACCTG AAAAACCTAA AAAATTGGGT CTTAAACAGA TTTACCTCAA TCTTGATAAAATCCTCTTTC |
| *whyD*\_R\_BamHI | *ataGGATCCCATTCACAAGAATACTTACCTATCATGGGAGGAACAACCG* |
| *lytB*\_5F\_F | GCCAACGCGTCTGTGAAGATGGTCC |
| *lytB \_*5F\_R | TCCTGCCTTTCCTCCCTCCCTCTGTTCTTATTTATTTTATTGTACC |
| *lytB* \_3F\_F | GAGAGCACAGATACGGCGGAGTGAATAGTAAGTTAAAAATCC |
| *lytB* \_3F\_R | CGATAAAAGCAGTCATAAAATCCTCG |
| *lytB* \_5F\_SEQ | GGGAAATGGTTTTGACTTGTCTGACC |
| *lytC*\_5F\_F | GAAGTACATTCAGGCGATTTTGAGAAACT |
| *lytC \_*5F\_R | TCCTGCCTTTCCTCCCTCGAATGCTGTTCCACCTAGCTTTTGC |
| *lytC* \_3F\_F | GAGAGCACAGATACGGCGCGCGTAGATGTCAGCGTTTGGTATTAA |
| *lytC* \_3F\_R | CAAACCAGGTGCTTGTCCAAGTTCG |
| *lytC* \_5F\_SEQ | CCAGTCCATTTCTAATCTGACGGAAAGG |

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