

Table S1. PICI and Phage DNA Recognition Sites and Proteins.

Bacterium [Accession Number] Island name	Rpp/TerS- λ {number or amino acids} [Accession #] (Range)	<i>cosQ</i> to bp300. <i>cosQ</i> and <i>cosN</i> are highlighted in yellow, the Rpp start codon in green, and the Rpp coding sequence continued in grey. For <i>cosλ</i> , R3, R2 and R1 are highlighted.
<i>E. Coli</i> CFT073 [AAN79974.1] PICI-A	RppA {144} [AE014075] (<i>rpp</i> Range:1388373-1388654) MIDKACFVSQQEIAEHFKVNRTTIRAWTKQGMPYLNADR GKSGGYHIGHTLLWSSGKSRLEAIRYHVETSALEKIMFA RLLSERDEYSSEETEHRFDEGLQIYGYSPEDEVSKARNK MAGFLAGWRHAVSVRRASMEQ SADTEQ	GGGTCCTTTCCGGCATATGGACCCGTTACGGGGCGGCGACCTCGCGGG TTTTCGCTATTTATGACGTTTTTCCGTGAAGGTGACACCACCACCACT TGATTAATATTTAACCATGCAGTTAAGGTAACATTATGATTGATAAAG CTTGTTTTGTAAAGTCAGCAGGAAATAGCTGAACATTTCAAGGTAAACA GAACCACTATTTCGCGCATGGACCAAACAGGGGATGCCGTATCTTAATG CGGATCGCGGAAAGTCTGGCGGTTATCACATCGGGCATA CATTGCTTT GGTCTTCAGGTAAGCCGTCTTGAGGCCATCAGATATCACG
<i>E. coli</i> upec-187 [NZ_JSLW01000069.1] PICI-B	RppB {146} [WP_033562019.1] (<i>rpp</i> Range: = 207846-211846) MNNKDCFVSQQEIAEHFKVNRTTIRAWTKQGMPYLDADR GKSGGYHIGHTLFWCMGKSHLDAIEYHGETSALEKIMVA RLISLERDEYFSEETEQRFDNGLQIYGYSPEDEVSKARNK MAGFLAGWRHAVAIRREHLQQSVVTEQEN	GGGTCCTTTCCAGAATCAGAAACACCGCGGGGCGGCAGACGCGCAAAA ACGCGCTATTTATGACGCTTTCCGGGAAAGGTACACCACCACCACTT GATTAATATTTAATCGCATTATTAAGGTAACGTTATGAATAATAAGA TTGTTTTGTAGTCAGCAGGAAATAGCAGAACATTTCAAGGTCAACAG AACCACCTATTTCGCGCATGGACCAAACAGGGCATGCCGTATCTTGATGC GGATCGCGGAAAGTCCGGCGGTTATCACATCGGACACACATTATTCTG GTGCATGGGTAAAAGTCATCTTGATGCTATTGAGTACCACG
<i>E. coli</i> HH29S [NZ_VNXH01000006.1] PICI-C	RppC {153} [WP_160513534.1] (<i>rpp</i> Range: 193800-195500) MSEKEFFLSQQEIIDQFGVDRTTVRAWTKRGLPFI EGDK GKPGRYQLGHVLFWVRGQEGKELGMTGELHPLDCIMHS REIMLSMVGEEEDKQ EYEKKFNKGLEIYGYSPEDEIAQAR GRAQGI EIGRELTLKRLKKHTNENKKKRKLIRQNDT	GGGTCCTTTCCGGCGATCCGAAAGGTTACGGGGCGGCAGACGCGCAAAA AAAGCGCTATTTATGACGCTTTCCGGGAAAGGTACACCACCACCACT TGATTAATATTCAACCAGTAATTATTGGTAACATTATGAGTGAAAAAG AATTTTTCTTAAGCCAGCAGGAAATAGCAGATCAATTTGGAGTAGACA GGACAACCTGT CAGGGCATGGACTAAACGCGGTTTGCCATT CATTGAAG GAGATAAAGGAAAGCCGGGCGCTACCAGTTAGGACATGTTCTTTTTTT GGGTAAGAGGACAGGAAGGACTCAAAGA ACTGGGTATGACTG
<i>Pluralibacter gergoviae</i> MGH173 [NGRT01000001.1] PICI-G	RppG {139} [OUF48096.1] (<i>rpp</i> Range: 2872558..2872977) MKGKSFFVSQQDIAEHFGVNRTTIRTWTKQGPYLEADR GKPGGYHIGHVLWWSMGKRRFEEIEFQGD TSALEKIMFA RLISSELDGPYGEEFERKFDESLLIYGTYLEDVSMARNK MAGFRAGWSHRVAARPNGNSVT	GGGTCCTTTCTGGTGATCCGGCGCGTTACGGGGCGACGACCTCACAGG ATTCCGCTACATATGAAATTTTCTGGGGATACCACACCACCACCACTC CTTGATTAAAAATAATCAGATGGAAAAGGTAATGTAATGAAGGGTAA GAGTTTTTTGTAAAGTCAGCAGGACATTGCTGAGCATTTCCGGCGTAAA CAGAACCACGATCCGCACCTGGACTAAACAGGGCATGCCCTATCTGGA GGCCGATCGTGGGAAGCCCGGTGGTTATCACATTGGCCACGTCTTGTG GTGGAGTATGGGTAAAAGACGCTTTGAAGAAATCGAGTTTCA
Phage λ [NC_001416]	TerS- λ {181} [NP_040580.1] (<i>Nu1</i> range: 191-736) MEVNKKQLADIFGASIRTIQNWQEQGMPVLRGGGKGNEV LYDSAAVIK WYAERDAEIE NEKL RREVEELRQASEADLQ PGTIEYERHRLTRAQADAQELKNARDSAEVVETAFCTFV	GGGTCCTTTCCGGTGATCCGACAGGTTACGGGGCGGCGACCTCGCGGG TTTTCGCTATTTATGAAAATTTTCCGGTTTAAGGCGTTTCCGTTCTTC TTCGTCATAACTTAATGTTTTTATTTAAATACCCTCTGAAAAGAAAG GAAACGACAGGTGCTGAAAGCGAGGCTTTTTTGCCCTCTGTCTGTTTCT TTCCTGTTTTTGTCCGTGGAATGAACAATGGAAGTCAACAAAAAGCA

	LSRIAGEIASILDGLPLSVQRRFPELENRHVDFLKRDI I KAMNKAAALDELIPGLLSEYIEQSG	GCTGGCTGACATTTTCGGTGCGAGTATCCGTACCATT CAGAACTGGCA GGAACAGGGAATGCCCGTTCTGCGAGGCGGTGGCAAGGGTAA
Phage N15 [NC_001901.1]	TerS-N15 {168} [1261640] (<i>l</i> range = 89-595) MAVLLNKSDMASSLGISVQAFDKWGVQPVEKRGREVFDD VRSVVDNRLLENQSRKLQSPGDDDDGVNIDYERWRLTRA NADAAELANEKKRREVVEAFCTFVLSRIA AEISSILDG IPLSMQRRFPELENRHIEFLKGDVIKAMNKAAALDERIP GLLNDYIDQSGS	GGGTCCT TTCCGGCAATCCGCCCTGTTA CGGGGCGGCGTCCGCG CAGA TTCTCGCTATATATGAAAAATTTGGACAT GAGGTTGTTGTT TAATCAT TGCTGAAAACTGGTGAGGGAAT ATG GCCGTGTTATTGAATAAATCTGA TATGGCTTCCTCGCTGGGAATATCCGTCCAGGCCTTTGATAAATGGGG TGTCCAGCCTGTAGAGAAGAGGGGTCGTGAAGTCTTCTTTGATGTTCG GTCAGTCGTAGATAACCGGCTCGAAAACCAGAGCAGAAAAC TACAACC ATCTCCGGGTGACGACGATGATGGTGTCAATATTGATTATGA