

1 **Supplementary Table 1.**

2 List of strains used in this study.

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Strain number	Strain	Plasmid	Comment
DA28696	<i>E. coli</i> K-12 BW25113	-	
DA53311	<i>E. coli</i> K-12 BW25113	pRD2	
DA53969	<i>E. coli</i> K-12 BW25113	pRD2( <i>arp1</i> )	
DA53977	<i>E. coli</i> K-12 BW25113	pRD2( <i>arp2</i> )	
DA53979	<i>E. coli</i> K-12 BW25113	pRD2( <i>arp3</i> )	
DA57920	<i>E. coli</i> K-12 BW25113	pBAD18	
DA57921	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	
DA57369	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> -His)	
DA60068	<i>E. coli</i> K-12 BW25113	pCA24N	
DA60069	<i>E. coli</i> K-12 BW25113	pCA24N( <i>arp1</i> )	
DA5438	<i>E. coli</i> K-12 MG1655	-	
DA52893	<i>E. coli</i> K-12 MG1655	pBAD18	
DA55590	<i>E. coli</i> K-12 MG1655	pBAD18( <i>arp1</i> )	
DA62567	<i>E. coli</i> K-12 MG1655 <i>bglGFP::PLlacO_arp1</i>	-	
DA6192	<i>S. typhimurium</i> LT2	-	
DA55755	<i>S. typhimurium</i> LT2	pBAD18	
DA55756	<i>S. typhimurium</i> LT2	pBAD18( <i>arp1</i> )	
DA12755	<i>K. pneumoniae</i> ATCC13883	-	
DA57896	<i>K. pneumoniae</i> ATCC13883	pBAD18	
DA57955	<i>K. pneumoniae</i> ATCC13883	pBAD18( <i>arp1</i> )	
DA54624	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L kanamycin
DA54625	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L kanamycin
DA54626	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L kanamycin
DA54629	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L

DA54630	<i>E. coli</i> K-12 BW25113	pRD2(empty)	kanamycin selected on 6 mg/L kanamycin
DA54631	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L kanamycin
DA54632	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L kanamycin
DA54633	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L kanamycin
DA54634	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L kanamycin
DA54635	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L kanamycin
DA54637	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L kanamycin
DA54639	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54640	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54641	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54642	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54643	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54644	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54645	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54647	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54648	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54649	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54650	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54651	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54652	<i>E. coli</i> K-12 BW25113	pRD2(empty)	selected on 6 mg/L amikacin
DA54853	<i>E. coli</i> K-12 BW25113	-	DA54632 plasmid cured
DA57926	<i>E. coli</i> K-12 BW25113	pBAD18	
DA57927	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	
DA54847	<i>E. coli</i> K-12 BW25113	-	DA54626 plasmid cured
DA57922	<i>E. coli</i> K-12 BW25113	pBAD18	

DA57923	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	
DA54850	<i>E. coli</i> K-12 BW25113	-	DA54629 plasmid cured
DA57924	<i>E. coli</i> K-12 BW25113	pBAD18	
DA57925	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	
DA54862	<i>E. coli</i> K-12 BW25113	-	DA54641 plasmid cured
DA58136	<i>E. coli</i> K-12 BW25113	pBAD18	
DA58137	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	
DA54869	<i>E. coli</i> K-12 BW25113	-	DA54648 plasmid cured
DA58140	<i>E. coli</i> K-12 BW25113	pBAD18	
DA58141	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	
DA54871	<i>E. coli</i> K-12 BW25113	-	DA54650 plasmid cured
DA58144	<i>E. coli</i> K-12 BW25113	pBAD18	
DA58145	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	
DA49828	<i>E. coli</i> K-12 MG1655 <i>rpsL</i> K42N	-	
DA56513	<i>E. coli</i> K-12 MG1655 <i>rpsL</i> K42N	pBAD18	
DA56514	<i>E. coli</i> K-12 MG1655 <i>rpsL</i> K42N	pBAD18( <i>arp1</i> )	
DA40134	<i>S. typhimurium</i> LT2 <i>gidB</i> Q167*	-	
DA57865	<i>S. typhimurium</i> LT2 <i>gidB</i> Q167*	pBAD18	
DA57866	<i>S. typhimurium</i> LT2 <i>gidB</i> Q167*	pBAD18( <i>arp1</i> )	
DA62112	<i>E. coli</i> K-12 BW25113	pBAD18( <i>envZ-TM1</i> )	
DA62113	<i>E. coli</i> K-12 BW25113	pBAD18( <i>envZ-TM2</i> )	
DA62114	<i>E. coli</i> K-12 BW25113	pBAD18( <i>phoQ-TM1</i> )	
DA62115	<i>E. coli</i> K-12 BW25113	pBAD18( <i>phoQ-TM2</i> )	
DA62116	<i>E. coli</i> K-12 BW25113	pBAD18( <i>pstC-TM1</i> )	
DA62117	<i>E. coli</i> K-12 BW25113	pBAD18( <i>pstC-TM2</i> )	
DA62118	<i>E. coli</i> K-12 BW25113	pBAD18( <i>murP-TM1</i> )	
DA62119	<i>E. coli</i> K-12 BW25113	pBAD18( <i>murP-TM2</i> )	
DA62120	<i>E. coli</i> K-12 BW25113	pBAD18( <i>pitA-TM1</i> )	
DA62121	<i>E. coli</i> K-12 BW25113	pBAD18( <i>pitA-TM2</i> )	
DA58975	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L2K
DA58072	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L2E
DA58085	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L2P
DA58104	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L2W

DA58098	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L2S
DA58638	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L3K
DA58733	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L3E
DA58650	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L3P
DA58728	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L3W
DA58646	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L3S
DA58976	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F4K
DA58097	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F4E
DA58101	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F4P
DA58090	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F4W
DA58657	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F4S
DA58635	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F5K
DA58648	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F5E
DA58652	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F5P
DA58639	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F5W
DA58119	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F5S
DA58106	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant C6K
DA58653	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant C6E
DA58980	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant C6P
DA58068	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant C6W
DA58084	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant C6S
DA58074	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F7K
DA58734	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F7E
DA58727	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F7P
DA58086	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F7W
DA58109	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F7S
DA58103	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I8K
DA58077	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I8E
DA58737	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I8P
DA58091	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I8W
DA58107	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I8S
DA58116	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F9K
DA58113	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F9E

DA58118	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F9P
DA58087	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F9W
DA58111	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F9S
DA58736	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L10K
DA58979	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L10E
DA58644	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L10P
DA58067	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L10W
DA58108	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L10S
DA58731	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L11K
DA58105	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L11E
DA58117	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L11P
DA58641	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L11W
DA58982	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L11S
DA58735	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I12K
DA58651	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I12E
DA58081	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I12P
DA58080	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I12W
DA58983	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I12S
DA58093	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant V13K
DA58096	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant V13E
DA58102	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant V13P
DA58649	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant V13W
DA58076	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant V13S
DA58064	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant W14K
DA58095	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant W14E
DA58066	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant W14P
DA58729	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant W14S
DA58977	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L15K
DA58647	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L15E
DA58981	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L15P
DA58065	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L15W
DA58071	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L15S
DA58094	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant C16K

DA58073	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant C16E
DA58732	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant C16P
DA58088	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant C16W
DA58645	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant C16S
DA58082	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I17K
DA58643	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I17E
DA58656	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I17P
DA58112	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I17W
DA58092	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant I17S
DA58636	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L18K
DA58078	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L18E
DA58640	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L18P
DA58070	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L18W
DA58984	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant L18S
DA58655	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant A19K
DA58079	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant A19E
DA58642	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant A19P
DA58099	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant A19W
DA58100	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant A19S
DA58654	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F20K
DA58114	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F20E
DA58089	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F20P
DA58069	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F20W
DA58730	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant F20S
DA58726	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant R21K
DA58075	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant R21E
DA58083	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant R21P
DA58634	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant R21W
DA58985	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant R21S
DA58978	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant S22K
DA58110	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant S22E
DA58637	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant S22P
DA58115	<i>E. coli</i> K-12 BW25113	pBAD18( <i>arp1</i> )	Mutagenesis variant S22W

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