

Supplementary material:

Table 1: Metabolic Enzymes involved in different metabolic Pathways of CA-MRSA

Sr. No.	Accession No.	Pathways/ Putative Targets	E-value	% Identity
Glycolysis/ Gluconeogenesis				
1.	MW2435	Fructose-bisphosphatase [EC:3.1.3.11]	0.59	29
2.	MW2049	Fructose-bisphosphate aldolase (EC:4.1.2.13)	0.15	26
3.	MW0737	Phosphoglyceromutase (EC:5.4.2.1)	0.48	33
4.	MW1729	Phosphoenolpyruvate carboxykinase (EC:4.1.1.49)	2.7	29
5.	MW1312	PTS system glucose-specific enzyme II A component	5.9	35
6.	MW2244	PTS system arbutin-like IIBC component	0	0
TCA Cycle				
7.	MW1173	2-oxoglutarate ferredoxin oxidoreductase subunit beta	0.81	25
8.	MW1030	Succinate dehydrogenase cytochrome b-558	1.1	33
9.	MW1729	Phosphoenolpyruvate carboxykinase (EC:4.1.1.49)	2.7	29
Pentose phosphate pathway				
10.	MW0844	Glucose-6-phosphate isomerase (EC:5.3.1.9)	5e-08	23
11.	MW1721	Putative transaldolase (EC:2.2.1.2)	0.16	38
12.	MW0113	Phosphopentomutase (EC:5.4.2.7)	2.9	45
13.	MW2049	Fructose-bisphosphate aldolase	0.15	26
14.	MW2435	Fructose-bisphosphatase	0.59	29
Pentose and glucuronate interconversions				
15.	MW2419	UTP-glucose-1-phosphate uridylyltransferase	1e-10	23
Fructose and mannose metabolism				
16.	MW2435	Fructose-bisphosphatase	0.59	29
17.	MW2085	Mannitol-1-phosphate 5-dehydrogenase	0.27	27
18.	MW2049	Fructose-bisphosphate aldolase (EC:4.1.2.13)	0.15	26
19.	MW0662	Fructose specific permease	No hits	0
20.	MW2082	PTS system mannitol specific IIBC component	No hits	0
Galactose metabolism				
21.	MW2419	UTP-glucose-1-phosphate uridylyltransferase	1e-10	23
22.	MW0223	PTS galactitol-specific enzyme IIC component	No hits	0
23.	MW2119	Tagatose-6-phosphate kinase	0.37	26
24.	MW2118	Tagatose 1,6-diphosphate aldolase	2.7	25
25.	MW2116	PTS system lactose-specific IIBC component	0.48	24
26.	MW1965	Sucrose-6-phosphate hydrolase	8.6	29
Ascorbate and aldarate metabolism				
27.	MW0306	PTS system ascorbate-specific transporter subunit IIC	No hits	0
Fatty acid biosynthesis				
28.	MW0865	3-oxoacyl-(acyl carrier protein) synthase III (EC:2.3.1.41)	0.81	30
Ubiquinone and other terpenoid-quinone biosynthesis				
29.	MW0927	Menaquinone biosynthesis protein	2e-04	24
30.	MW1734	O-succinylbenzoic acid synthetase	4.1	30
Oxidative phosphorylation				
31.	MW1030	Succinate dehydrogenase cytochrome b-558	1.1	33
32.	MW2033	F0F1 ATP synthase subunit A	0.6	27
33.	MW1860	Putative manganese-dependent inorganic pyrophosphatase (EC:3.6.1.1)	0.19	28
Purine metabolism				
34.	MW0113	Phosphopentomutase (EC:5.4.2.7)	2.9	45
35.	MW0952	Phosphoribosylformylglycinamidine synthase II	2.00E-017	23
36.	MW0948	Phosphoribosylaminoimidazole carboxylase ATPase subunit	1.00E-004	22
37.	MW0110	Purine nucleoside phosphorylase (EC:2.4.2.1)	1.7	25
38.	MW2062	Purine nucleoside phosphorylase (EC:2.4.2.1)	0.028	23
39.	MW2537	Anaerobic ribonucleoside triphosphate reductase (EC:1.17.4.2)	0.12	26
40.	MW2143	DNA-directed RNA polymerase subunit alpha (EC:2.7.7.6)	0.007	22
41.	MW1646	DNA polymerase III alpha subunit	3.2	30
42.	MW1147	DNA polymerase III PolC	0.015	24
43.	MW0002	DNA polymerase III subunit beta (EC:2.7.7.7)	0.01	26
44.	MW1538	DNA polymerase III subunit delta	1.2	46
45.	MW0439	DNA polymerase III delta prime subunit	0.024	25
46.	MW0887	GTP pyrophosphokinase	4.2	30
47.	MW1051	Carbamate kinase (EC:2.7.2.2)	0.12	39
48.	MW2553	Carbamate kinase (EC:2.7.2.2)	0.061	25
Pyrimidine metabolism				
49.	MW1088	Orotate phosphoribosyltransferase	2.00E-012	22
50.	MW1141	Uridylate kinase	1.7	26
51.	MW2143	DNA-directed RNA polymerase subunit alpha (EC:2.7.7.6)	0.007	22
52.	MW1646	DNA polymerase III alpha subunit	3.2	30
53.	MW1147	DNA polymerase III PolC	0.015	24
54.	MW0002	DNA polymerase III subunit beta (EC:2.7.7.7)	0.01	26
55.	MW1538	DNA polymerase III subunit delta	1.2	46
56.	MW0439	DNA polymerase III delta prime subunit	0.024	25
57.	MW2537	Anaerobic ribonucleoside triphosphate reductase (EC:1.17.4.2)	0.12	26
58.	MW0110	Purine nucleoside phosphorylase (EC:2.4.2.1)	1.7	25
59.	MW2062	Purine nucleoside phosphorylase (EC:2.4.2.1)	0.028	23
60.	MW0437	Thymidylate kinase	0.041	25
Alanine, aspartate and glutamate metabolism				

61.	MW0426	Glutamate synthase large subunit	0.5	24
62.	MW0427	Glutamate synthase subunit beta (EC:1.4.1.13)	3.00E-012	22
63.		Glycine, serine and threonine metabolism		
64.	MW1281	Aspartate kinase	3.7	25
65.	MW1214	Aspartate kinase (EC:2.7.2.4)	4.3	30
66.	MW1215	Homoserine dehydrogenase	6.5	23
67.	MW1217	Homoserine kinase	2	26
68.	MW0737	Phosphoglyceromutase (EC:5.4.2.1)	0.48	33
69.	MW1260	Tryptophan synthase subunit alpha (EC:4.2.1.20)	0.39	22
70.	MW1259	Tryptophan synthase subunit beta (EC:4.2.1.20)	1.8	30
71.	MW0332	5-methyltetrahydropteroyltriglutamate--homocysteine S-methyltransferase (EC:2.1.1.14)	1.2	44
72.	MW1550	5'-methylthioadenosine nucleosidase/S-adenosylhomocysteine nucleosidase	3.5	41
		Valine, leucine and isoleucine biosynthesis		
73.	MW1980	Ketol-acid reductoisomerase (EC:1.1.1.86)	0.039	35
74.	MW1977	Dihydroxy-acid dehydratase (EC:4.2.1.9)	0.29	33
75.	MW1981	d-Alanine metabolism	0.005	23
		Lysine biosynthesis		
76.	MW1215	Homoserine dehydrogenase	6.5	23
77.	MW1281	Aspartate kinase	3.7	25
78.	MW1214	Aspartate kinase (EC:2.7.2.4)	4.3	30
79.	MW1284	Dihydrodipicolinate reductase	4.1	40
80.	MW1943	Succinyl-diaminopimelate desuccinylase	4.00E-008	23
81.	MW1288	Diaminopimelate decarboxylase	1.00E-018	23
82.	MW1285	Tetrahydrodipicolinate acetyltransferase	6.7	34
83.	MW2005	UDP-N-acetylmuramoyl-L-alanyl-D-glutamyl-2,6-diaminopimelate-D-alanyl-D-alanyl ligase	1.4	59
		Lysine degradation		
84.	MW1693	D-alanine aminotransferase	0.74	43
		Beta-Lactam resistance		
85.	MW2608	Drp35	2.00E-004	22
86.	MW0032	Truncated methicillin resistance protein MecR1	0.55	23
87.	MW0031	Penicillin binding protein 2 prime	No hits	0
		Arginine and proline metabolism		
88.	MW1693	D-alanine aminotransferase	0.74	43
89.	MW2556	Arginine deiminase (EC:3.5.3.6)	2.7	34
90.	MW1051	Carbamate kinase (EC:2.7.2.2)	0.12	39
91.	MW2553	Carbamate kinase (EC:2.7.2.2)	0.061	25
92.	MW0157	Bifunctional ornithine acetyltransferase/N-acetylglutamate synthase protein (EC:2.3.1.35 2.3.1.1)	1.9	25
93.	MW0158	N-acetyl-gamma-glutamyl-phosphate reductase (EC:1.2.1.38)	4.6	38
		Histidine metabolism		
94.	MW2598	ATP phosphoribosyltransferase catalytic subunit (EC:2.4.2.17)	2.2	41
95.	MW2591	Bifunctional phosphoribosyl-AMP cyclohydrolase/phosphoribosyl-ATP pyrophosphatase protein	2.1	52
96.	MW2593	1-(5-phosphoribosyl)-5-[(5-phosphoribosylamino)methylideneamino]imidazole-4-carboxamide isomerase	4.3	34
97.	MW2592	Imidazole glycerol phosphate synthase subunit HisF	1.2	29
98.	MW0686	Histidinol-phosphate aminotransferase	1.00E-005	21
99.	MW2597	Histidinol dehydrogenase	0.23	25
		Tyrosine metabolism		
100.	MW0686	Histidinol-phosphate aminotransferase	1.00E-005	21
		Phenylalanine metabolism		
101.	MW0686	Histidinol-phosphate aminotransferase	1.00E-005	21
102.	MW1693	D-alanine aminotransferase	0.74	43
		Phenylalanine, tyrosine and tryptophan biosynthesis		
103.	MW1680	Bifunctional 3-deoxy-7-phosphoheptulonate synthase/chorismate mutase	1.3	24
104.	MW1355	3-dehydroquinate synthase	0.75	42
105.	MW0782	3-dehydroquinate dehydratase	0.28	28
106.	MW1547	Shikimate 5-dehydrogenase	0.038	23
107.	MW1354	3-phosphoshikimate 1-carboxyvinyltransferase (EC:2.5.1.19)	0.71	40
108.	MW1356	Chorismate synthase (EC:4.2.3.5)	3.2	30
109.	MW1254	Anthranilate synthase component I	1.6	22
110.	MW1256	Anthranilate phosphoribosyltransferase	0.96	25
111.	MW1258	N-(5'-phosphoribosyl)anthranilate isomerase	No hits	0
112.	MW1257	Indole-3-glycerol-phosphate synthase	1	31
113.	MW1260	Tryptophan synthase subunit alpha (EC:4.2.1.20)	0.39	22
114.	MW1259	Tryptophan synthase subunit beta (EC:4.2.1.20)	1.8	30
115.	MW1252	Prephenate dehydrogenase (EC:1.3.1.12)	1.7	30
116.	MW0686	Histidinol-phosphate aminotransferase	1.00E-005	21
		Novobiocin biosynthesis		
117.	MW1252	Prephenate dehydrogenase (EC:1.3.1.12)	1.7	30
118.	MW0686	Histidinol-phosphate aminotransferase	1.00E-005	21
		Beta-Alanine metabolism		
119.	MW2517	Pantoate--beta-alanine ligase (EC:6.3.2.1)	1.6	33
		Taurine and hypotaurine metabolism		
120.	MW0543	Phosphotransacetylase	0.85	29
121.	MW1654	Acetate kinase (EC:2.7.2.1)	9.1	41
		Selenocompound metabolism		
122.	MW0332	5-methyltetrahydropteroyltriglutamate--homocysteine S-methyltransferase (EC:2.1.1.14)	1.2	44
		D-Glutamine and D-glutamate metabolism		
123.	MW1033	Glutamate racemase	0.091	24
124.	MW1066	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate synthetase (EC:6.3.2.9)	3.4	27
125.	MW1683	UDP-N-acetylmuramate--L-alanine ligase (EC:6.3.2.8)	0.33	22
		D-Arginine and D-ornithine metabolism		

126.	MW1693	D-alanine aminotransferase	0.74	43
		D-Alanine metabolism		
127.	MW1994	Alanine racemase	0.6	23
128.	MW2006	D-alanyl-alanine synthetase A (EC:6.3.2.4)	0.023	23
129.	MW1693	D-alanine aminotransferase	0.74	43
		Starch and sucrose metabolism		
130.	MW2299	PTS system sucrose-specific IIBC component	1	29
131.	MW1965	Sucrose-6-phosphate hydrolase	8.6	29
132.	MW0428	PTS enzyme II	0.62	38
133.	MW2419	UTP-glucose-1-phosphate uridylyltransferase	1.00E-010	21
		Amino sugar and nucleotide sugar metabolism		
134.	MW0165	N-acetylmuramic acid-6-phosphate etherase	3.00E-008	20
135.	MW1668	PTS system N-acetylglucosamine-specific IIABC component	0.5	22
136.	MW0454	Bifunctional N-acetylglucosamine-1-phosphate uridylyltransferase / glucosamine-1-phosphate acetyltransferase	6.00E-015	21
137.	MW0130	Capsular polysaccharide synthesis enzyme Cap8G	0.055	27
138.	MW0139	Capsular polysaccharide synthesis enzyme Cap8P	1.00E-007	21
139.	MW2035	UDP-GlcNAc 2-epimerase	2.00E-007	22
139.	MW0295	N-acetylmannosamine-6-phosphate 2-epimerase (EC:5.1.3.9)	2.5	30
140.	MW0138	Capsular polysaccharide synthesis enzyme Cap8O	4.00E-013	23
141.	MW2024	UDP-N-acetylglucosamine 1-carboxyvinyltransferase (EC:2.5.1.7)	0.78	26
142.	MW2048	UDP-N-acetylglucosamine 1-carboxyvinyltransferase (EC:2.5.1.7)	0.32	25
143.	MW0700	UDP-N-acetylenolpyruvoylglucosamine reductase	1.5	24
144.	MW2459	PTS system glucose-specific IIABC component	3.5	38
145.	MW0844	Glucose-6-phosphate isomerase (EC:5.3.1.9)	5.00E-008	23
146.	MW2419	UTP-glucose-1-phosphate uridylyltransferase	1.00E-010	23
		Peptidoglycan biosynthesis		
147.	MW2024	UDP-N-acetylglucosamine 1-carboxyvinyltransferase (EC:2.5.1.7)	0.78	26
148.	MW2048	UDP-N-acetylglucosamine 1-carboxyvinyltransferase (EC:2.5.1.7)	0.32	25
149.	MW0700	UDP-N-acetylenolpyruvoylglucosamine reductase	1.5	24
150.	MW1683	UDP-N-acetylmuramate--L-alanine ligase (EC:6.3.2.8)	0.33	22
151.	MW1066	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate synthetase (EC:6.3.2.9)	3.4	27
152.	MW2006	D-alanyl-alanine synthetase A (EC:6.3.2.4)	0.023	23
153.	MW2005	UDP-N-acetylmuramoylalanyl-D-glutamyl-2,6-diaminopimelate-D-alanyl-D-alanyl ligase	1.4	59
154.	MW0645	Undecaprenyl pyrophosphate phosphatase (EC:3.6.1.27)	No hits	0
155.	MW1065	Phospho-N-acetylmuramoyl-pentapeptide-transferase	1.2	36
156.	MW1340	PBP2	2.7	25
157.	MW0604	Penicillin binding protein 4	1.3	23
158.	MW0899	UDP-N-acetylmuramoylalanyl-D-glutamate--L-lysine ligase	5	28
159.	MW2180	FmhB protein	0.1	29
160.	MW1261	Factor essential for expression of methicillin resistance	1.1	33
161.	MW1262	FemB protein	0.17	23
162.	MW1672	Transglycosylase	No hits	0
163.	MW1814	Glycosyltransferase	21	3
164.	MW1064	Penicillin-binding protein 1	2.5	21
165.	MW1504	Penicillin-binding protein 3	0.95	28
		Glycerolipid metabolism		
166.	MW1112	Putative glycerol-3-phosphate acyltransferase PlsX	9.6	23
167.	MW0297	Glycerol ester hydrolase	3	23
168.	MW2590	Triacylglycerol lipase precursor (EC:3.1.1.3)	4.8	32
169.	MW0898	Diacylglycerol glucosyltransferase	0.73	31
		Inositol phosphate metabolism		
170.	MW1940	Truncated beta-hemplysin	0.03	25
		Glycerophospholipid metabolism		
171.	MW1112	Putative glycerol-3-phosphate acyltransferase PlsX	9.6	23
172.	MW1940	Truncated beta-hemplysin	0.03	25
		Pyruvate metabolism		
173.	MW0201	Formate acetyltransferase	1.4	21
174.	MW1654	Acetate kinase (EC:2.7.2.1)	9.1	41
175.	MW0543	Phosphotransacetylase	0.85	29
176.	MW2286	Malate:quinone oxidoreductase (EC:1.1.5.4)	0.6	31
177.	MW2526	Malate:quinone oxidoreductase (EC:1.1.5.4)	0.25	21
178.	MW1729	Phosphoenolpyruvate carboxykinase (EC:4.1.1.49)	2.7	29
179.	MW1981	2-isopropylmalate synthase (EC:2.3.3.13)	0.005	23
		Propanoate metabolism		
180.	MW1654	Acetate kinase (EC:2.7.2.1)	9.1	41
181.	MW0543	Phosphotransacetylase	0.85	29
182.	MW0201	Formate acetyltransferase	1.4,	21
		Butanoate metabolism		
183.	MW1030	Succinate dehydrogenase cytochrome b-558	1.1	33
184.	MW0201	Formate acetyltransferase	1.4	21
		Methane metabolism		
185.	MW2049	Fructose-bisphosphate aldolase (EC:4.1.2.13)	0.15	26
186.	MW1654	Acetate kinase (EC:2.7.2.1)	9.1	41
187.	MW0543	Phosphotransacetylase	0.85	29
188.	MW0737	Phosphoglyceromutase (EC:5.4.2.1)	0.48	33
		Thiamine metabolism		
189.	MW1658	Thiamine biosynthesis protein ThiI	0.52	26
190.	MW2015	Hydroxyethylthiazole kinase (EC:2.7.1.50)	1.2	31
191.	MW2014	Thiamine-phosphate pyrophosphorylase	0.18	35
		Riboflavin metabolism		

192.	MW1709	Riboflavin biosynthesis protein	2.8	27
193.	MW1711	Riboflavin specific deaminase	0.003	24
194.	MW1710	Riboflavin synthase subunit alpha (EC:2.5.1.9)	0.21	30
Vitamin B6 metabolism				
195.	MW0535	Phosphomethylpyrimidine kinase	0.037	25
196.	MW0474	Pyridoxal biosynthesis lyase PdxS	0.58	37
Nicotinate and nicotinamide metabolism				
197.	MW0110	Purine nucleoside phosphorylase (EC:2.4.2.1)	1.7	25
198.	MW2062	Purine nucleoside phosphorylase (EC:2.4.2.1)	0.028	23
Pantothenate and CoA biosynthesis				
199.	MW1980	Ketol-acid reductoisomerase (EC:1.1.1.86)	0.039	35
200.	MW1977	Dihydroxy-acid dehydratase (EC:4.2.1.9)	0.29	33
201.	MW2518	3-methyl-2-oxobutanoate hydroxymethyltransferase (EC:2.1.2.11)	3.2	33
202.	MW2367	2-dehydropantoate 2-reductase (EC:1.1.1.169)	2.2	26
203.	MW2519	2-dehydropantoate 2-reductase (EC:1.1.1.169)	0.49	32
204.	MW2517	Pantoate-beta-alanine ligase (EC:6.3.2.1)	1.6	33
Biotin metabolism				
205.	MW2346	6-carboxyhexanoate--CoA ligase (EC:6.2.1.14)	0.75	26
206.	MW2350	Dethiobiotin synthetase	0.81	30
Folate biosynthesis				
207.	MW0469	Dihydropteroate synthase	1.3	28
Porphyrin and chlorophyll metabolism				
208.	MW1616	Glutamyl-tRNA reductase	0.21	28
209.	MW1613	Uroporphyrinogen III synthase	0.34	26
210.	MW2320	Uroporphyrin-III C-methyl transferase	1.2	26
211.	MW2539	Precorrin-2 dehydrogenase	1.7	28
Terpenoid backbone biosynthesis				
212.	MW0450	4-diphosphocytidyl-2-C-methyl-D-erythritol kinase (EC:2.7.1.148)	5.1	35
213.	MW2466	Hydroxymethylglutaryl-CoA reductase	2.00E-005	21
214.	MW0545	Mevalonate kinase	3.00E-005	22
214.	MW0547	Phosphomevalonate kinase	7.3	26
Nitrogen metabolism				
215.	MW1051	Carbamate kinase (EC:2.7.2.2)	0.12	39
216.	MW2553	Carbamate kinase (EC:2.7.2.2)	0.061	25
217.	MW2319	Respiratory nitrate reductase alpha chain	3.3	43
218.	MW2318	Nitrate reductase beta chain NarH	1.7	31
219.	MW2316	Nitrate reductase gamma chain	0.68	29
220.	MW0426	Glutamate synthase large subunit	0.5	24

Table 2: List of Essential Genes for CA-MRSA

Sr. No.	Gene ID	Gene Name	DEG ID	TARGET	PATHWAYS
1.	MW2049	fbaA	DEG10020239	Fructose-bisphosphate aldolase (EC:4.1.2.13)	Glycolysis / Gluconeogenesis Pentose phosphate pathway Fructose and mannose metabolism Methane metabolism
2.	MW0737	pgm	DEG10020010	Phosphoglyceromutase (EC:5.4.2.1)	Glycolysis / Gluconeogenesis Glycine, serine and threonine metabolism Methane metabolism
3.	MW2244	glvC	DEG10020290	PTS system arbutin-like IIBC component	Glycolysis / Gluconeogenesis
4.	MW1030	sdhC	DEG10150209	Succinate dehydrogenase cytochrome b-558	TCA cycle Oxidative phosphorylation
5.	MW0844	pgi	DEG10020081	Glucose-6-phosphate isomerase (EC:5.3.1.9)	Butanoate metabolism Pentose phosphate pathway Amino sugar and nucleotide sugar metabolism
6.	MW0113	drm	DEG10020010	Phosphopentomutase (EC:5.4.2.7)	Pentose phosphate pathway Purine metabolism
7.	MW2085	mtlD	DEG10020244	Mannitol-1-phosphate 5-dehydrogenase	Fructose and mannose metabolism
8.	MW0662	fruA	DEG10020060	Fructose specific permease	Fructose and mannose metabolism
9.	MW0223	gatC	DEG10170276	PTS galactitol-specific enzyme IIC component	Galactose metabolism
10.	MW0865	fabH	DEG10210185	3-oxoacyl-(acyl carrier protein) synthase III (EC:2.3.1.41)	Fatty acid biosynthesis
11.	MW0952	purL	DEG10100130	Phosphoribosylformylglycinamide synthase II	Purine metabolism
12.	MW0110	pnp	DEG10020139	Purine nucleoside phosphorylase (EC:2.4.2.1)	Purine metabolism Pyrimidine metabolism Nicotinate and nicotinamide metabolism
13.	MW2062	deoD	DEG10060036	Purine nucleoside phosphorylase (EC:2.4.2.1)	Purine metabolism Pyrimidine metabolism Nicotinate and nicotinamide metabolism

14.	MW2143	rpoA	DEG10020252	DNA-directed RNA polymerase subunit alpha (EC:2.7.7.6)	Purine metabolism Pyrimidine metabolism
15.	MW1646	dnaE	DEG10020201	DNA polymerase III alpha subunit	Purine metabolism Pyrimidine metabolism
16.	MW1538	holA	DEG10170216	DNA polymerase III subunit delta	Purine metabolism Pyrimidine metabolism
17.	MW1141	pyrH	DEG10170157	Uridylate kinase (EC:2.7.4.22)	Pyrimidine metabolism
18.	MW0437	tmk	DEG10020028	Thymidylate kinase	Pyrimidine metabolism
19.	MW1259	trpB	DEG10020152	Tryptophan synthase subunit beta (EC:4.2.1.20)	Glycine, serine and threonine metabolism Phenylalanine, tyrosine and tryptophan biosynthesis
20.	MW2005	murF	DEG10020229	UDP-N-acetylmuramoylalanyl-D-glutamyl-2,6-diaminopime-late-D-alanyl-D-alanyl ligase	Lysine biosynthesis Peptidoglycan biosynthesis
21.	MW0543	eutD	DEG10020053	Phosphotransacetylase	Taurine and hypotaurine metabolism Pyruvate metabolism Propanoate metabolism Methane metabolism
22.	MW1654	ackA	DEG10020202	Acetate kinase (EC:2.7.2.1)	Taurine and hypotaurine metabolism Pyruvate metabolism Propanoate metabolism Methane metabolism
23.	MW1033	murI	DEG10020105	Glutamate racemase	D-Glutamine and D-glutamate metabolism
24.	MW1066	murD	DEG10020108	UDP-N-acetylmuramoyl-L-alanyl-D-glutamate synthetase (EC:6.3.2.9)	D-Glutamine and D-glutamate metabolism Peptidoglycan biosynthesis
25.	MW1683	murC	DEG10020208	UDP-N-acetylmuramate--L-alanine ligase (EC:6.3.2.8)	D-Glutamine and D-glutamate metabolism Peptidoglycan biosynthesis
26.	MW2006	ddl	DEG10020230	D-alanyl-alanine synthetase A (EC:6.3.2.4)	D-Alanine metabolism Peptidoglycan biosynthesis
27.	MW0454	glmU	DEG10170026	Bifunctional N-acetylglucosamine-1-phosphate uridyltransferase/glucosamine-1-phosphate acetyltransferase	Amino sugar & nucleotide sugar metabolism
28.	MW2024	murA	DEG10020231	UDP-N-acetylglucosamine 1-carboxyvinyltransferase (EC:2.5.1.7)	Amino sugar & nucleotide sugar metabolism Peptidoglycan biosynthesis
29.	MW0700	murB	DEG10170067	UDP-N-acetylenolpyruvoylglucosamine reductase	Amino sugar & nucleotide sugar metabolism Peptidoglycan biosynthesis
30.	MW2459	ptsG	DEG10020290	PTS system glucose-specific IIABC component	Amino sugar & nucleotide sugar metabolism
31.	MW0645	uppP	DEG10020058	Undecaprenyl pyrophosphate phosphatase (EC:3.6.1.27)	Peptidoglycan biosynthesis
32.	MW1065	mraY	DEG10020107	Phospho-N-acetylmuramoyl-pentapeptide-transferase	Peptidoglycan biosynthesis
33.	MW1112	plsX	DEG10020118	Putative glycerol-3-phosphate acyltransferase PlsX	Glycerolipid metabolism Glycerophospholipid metabolism
34.	MW2590	lip	DEG10020080	Triacylglycerol lipase precursor (EC:3.1.1.3)	Glycerolipid metabolism
35.	MW0469	folP	DEG10070125	Dihydropteroate synthase	Folate biosynthesis
36.	MW2466	mvaA	DEG10210047	Hydroxymethylglutaryl-CoA reductase	Terpenoid backbone biosynthesis
37.	MW0545	mvaK1	DEG10210043	Mevalonate kinase	Terpenoid backbone biosynthesis
38.	MW0547	mvaK2	DEG10210045	Phosphomevalonate kinase	Terpenoid backbone biosynthesis
39.	MW2319	narG	DEG10020284	Respiratory nitrate reductase alpha chain	Nitrogen metabolism