

***Staphylococcus aureus* (MRSA), Strain COL Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 7**

Catalog No. NR-19503

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Contributor:

Pathogen Functional Genomics Resource Center at the J. Craig Venter Institute

Manufacturer:

BEI Resources

Product Description:

Production in the 96-well format has increased risk of cross-contamination between adjacent wells. Individual clones should be purified (e.g. single colony isolation and purification using good microbiological practices) and sequence-verified prior to use. BEI Resources does not confirm or validate individual mutants provided by the contributor.

The methicillin-resistant *Staphylococcus aureus* (*S. aureus*), strain COL Gateway® clone set consists of 25 plates which contain 2343 sequence validated clones from *S. aureus* strain COL cloned in *Escherichia coli* (*E. coli*) DH10B-T1 cells. Each open reading frame was constructed in vector pDONR™221 (Invitrogen™) with a native start codon and no stop codon. The sequence was validated by full length sequencing of each clone with greater than 1X coverage and a mutation rate of less than 0.2%. Detailed information about each clone is shown in Table 1.

Information related to the use of Gateway® Clones can be obtained from [Invitrogen™](#). Recombination was facilitated through an *attB* substrate (*attB*-PCR product or a linearized *attB* expression clone) with an *attP* substrate (pDONR™221) to create an *attL*-containing entry clone. The entry clone contains recombinational cloning sites, *attL1* and *attL2* to facilitate gene transfer into a destination vector, M13 forward and reverse priming sites for sequencing and a kanamycin resistance gene for selection. Please refer to the [Invitrogen™ Gateway® Technology Manual](#) for additional details.

Material Provided:

Each inoculated well of the 96-well plate contains approximately 60 µL of *E. coli* culture (strain DH10B-T1) in Luria Bertani (LB) broth containing 50 µg/mL kanamycin supplemented with 15% glycerol.

Packaging/Storage:

NR-19503 was packaged aseptically in a 96-well plate. The product is provided frozen and should be stored at -80°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:

Media:

LB broth or agar containing 50 µg/mL kanamycin

Incubation:

Temperature: *E. coli*, strain DH10B-T1 clones should be grown at 37°C.

Atmosphere: Aerobic

Propagation:

1. Scrape top of frozen well with a pipette tip and streak onto agar plate.
2. Incubate the plates at 37°C for 18 to 24 hours.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Staphylococcus aureus* (MRSA), Strain COL Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 7, NR-19503."

Biosafety Level: 1

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. [Biosafety in Microbiological and Biomedical Laboratories](#). 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see www.cdc.gov/biosafety/publications/bmbL5/index.htm.

Disclaimers:

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and a Biofilm-Producing Methicillin-Resistant *Staphylococcus epidermidis* Strain." *J. Bacteriol.* 187 (2005): 2426-2438. PubMed: 15774886.

ATCC® is a trademark of the American Type Culture Collection.



References:

- Gill, S. R., et al. "Insights on Evolution of Virulence and Resistance from the Complete Genome Analysis of an Early Methicillin-Resistant *Staphylococcus aureus* Strain

Table 1: *Staphylococcus aureus*, Strain COL Gateway® Clones, Plate 7 (ZSAJG)

Clone	Well Position	ORF Length	Locus ID	Description (Gene name)	Accession Number	Average Depth of Coverage
1287	A01	439	SACOL0254	ribose transport protein	YP_185150.1	2.587699317
1289	A02	439	SACOL0260	IS1272-related, transposase, degenerate	N/A	3.182232346
1291	A03	439	SACOL0347	conserved hypothetical protein	YP_185239.1	2.574031891
1293	A04	439	SACOL0577	conserved hypothetical protein	YP_185463.1	3.182232346
1295	A05	439	SACOL1625	cytidine deaminase	YP_186465.1	3.177676538
1299	A06	442	SACOL0109	hypothetical protein	YP_185013.1	3.156108597
1302	A07	442	SACOL0457	conserved hypothetical protein	YP_185347.1	3.171945701
1306	A09	445	SACOL2281	urease, beta subunit	YP_187088.1	2.573033708
1307	A10	445	SACOL2551	conserved hypothetical protein TIGR00051	YP_187343.1	3.188764045
1309	A11	448	SACOL0591	ribosomal protein S12	YP_185477.1	3.142857143
1311	A12	448	SACOL1753	universal stress protein family	YP_186589.1	3.171875
1313	B01	448	SACOL1948	hypothetical protein	YP_186773.1	3.178571429
1315	B02	448	SACOL2132	conserved hypothetical protein	YP_186947.1	2.185267857
1317	B03	451	SACOL2193	transcriptional regulator, MerR family	YP_187004.1	3.175166297
1319	B04	451	SACOL2621	hypothetical protein	YP_187410.1	3.179600887
1321	B05	454	SACOL0339	prophage L54a, single-stranded DNA binding protein	YP_185231.1	3.174008811
1323	B06	454	SACOL0404	transcriptional regulator, MarR family	YP_185296.1	3.162995595
1325	B07	454	SACOL0771	6-pyruvoyl tetrahydrobiopterin synthase, putative	YP_185648.1	3.178414097
1327	B08	454	SACOL1060	transcriptional regulator, MarR family	YP_185925.1	3.171806167
1329	B09	454	SACOL1113	conserved hypothetical protein	YP_185977.1	3.18722467
1331	B10	454	SACOL2107	phosphotyrosine protein phosphatase	YP_186922.1	3.191629956
1335	B11	454	SACOL2344	hypothetical protein	YP_187150.1	3.174008811
1337	B12	454	SACOL2485	hypothetical protein	YP_187281.1	3.176211454
1341	C01	457	SACOL0753	conserved hypothetical protein	YP_185632.1	3.159737418
1343	C02	457	SACOL0872	OsmC/Ohr family protein	YP_185744.1	3.15536105
1345	C03	457	SACOL1681	Rrf2 family protein	YP_186521.1	3.168490153
1347	C04	457	SACOL1802	conserved hypothetical protein	YP_186635.1	3.166301969
1349	C05	457	SACOL1894	HIT family protein	YP_186720.1	3.177242888
1351	C06	457	SACOL2294	conserved hypothetical protein	YP_187101.1	3.164113786
1353	C07	457	SACOL2379	conserved hypothetical protein	YP_187183.1	3.177242888
1355	C08	457	SACOL2484	alkylhydroperoxidase, AhpD family	YP_187280.1	2.177242888
1357	C09	457	SACOL2487	conserved hypothetical protein	YP_187283.1	3.161925602
1360	C10	460	SACOL0346	prophage L54a, N-6-adenine-methyltransferase	YP_185238.1	3.176086957
1362	C11	460	SACOL0680	Na ⁺ /H ⁺ antiporter, MnhB component, putative	YP_185563.1	3.152173913
1363	C12	460	SACOL0726	staphylococcal accessory protein X	YP_185607.1	3.191304348
1365	D01	460	SACOL1339	conserved hypothetical protein	YP_186193.1	3.180434783
1367	D02	460	SACOL2197	surface protein, putative	YP_187008.1	2.173913043
1369	D03	463	SACOL0032	MaoC domain protein	YP_184943.1	3.172786177
1371	D04	463	SACOL0662	conserved hypothetical protein	YP_185546.1	3.177105832
1373	D05	463	SACOL0713	hypothetical protein	YP_185595.1	3.174946004
1375	D06	463	SACOL0954	Na ⁺ /H ⁺ antiporter, MnhB component	YP_185823.1	3.172786177
1377	D07	463	SACOL1671	conserved hypothetical protein TIGR00250	YP_186511.1	3.168466523
1379	D08	463	SACOL2186	galactose-6-phosphate isomerase, LacA subunit	YP_186997.1	3.183585313
1381	D09	463	SACOL2385	heat shock protein, Hsp20 family	YP_187189.1	3.146868251

Product Information Sheet for NR-19503

Clone	Well Position	ORF Length	Locus ID	Description (Gene name)	Accession Number	Average Depth of Coverage
1383	D10	463	SACOL2679	hypothetical protein	N/A	3.149028078
1385	D11	466	SACOL0583	ribosomal protein L11	YP_185469.1	3.130901288
1388	D12	466	SACOL0888	pathogenicity island, lipoprotein, putative	YP_185759.1	2.587982833
1389	E01	466	SACOL1191	mraZ protein	YP_186053.1	3.173819742
1391	E02	466	SACOL1645	comE operon protein 2	YP_186485.1	3.180257511
1393	E03	466	SACOL2371	conserved hypothetical protein	YP_187175.1	2.587982833
1395	E04	466	SACOL2557	conserved domain protein	YP_187350.1	2.165236052
1398	E05	469	SACOL0930	conserved hypothetical protein	YP_185800.1	1.976545842
1400	E06	469	SACOL0985	surface protein, putative	YP_185853.1	3.153518124
1402	E07	469	SACOL1063	acetyltransferase, GNAT family	YP_185927.1	3.153518124
1403	E08	469	SACOL1129	conserved hypothetical protein	YP_185993.1	3.176972281
1405	E09	469	SACOL2041	conserved hypothetical protein TIGR00150	YP_186858.1	3.172707889
1407	E10	469	SACOL2148	PTS system, mannitol-specific IIA component	YP_186961.1	3.187633262
1409	E11	469	SACOL2232	ribosomal protein L16	YP_187042.1	3.162046908
1411	E12	469	SACOL2531	transcriptional regulator, MarR family	YP_187324.1	3.18336887
1413	F01	472	SACOL0364	prophage L54a, transcriptional regulator, RinA family	YP_185256.1	3.150423729
1415	F02	472	SACOL0686	Na ⁺ /H ⁺ antiporter, MnhG component, putative	YP_185568.1	3.167372881
1417	F03	472	SACOL1464	conserved hypothetical protein	YP_186312.1	3.156779661
1420	F04	472	SACOL1558	conserved hypothetical protein	YP_186399.1	2
1421	F05	472	SACOL2013	hypothetical protein	YP_186833.1	3.167372881
1423	F06	472	SACOL2207	ribosomal protein L13	YP_187017.1	2.593220339
1426	F07	475	SACOL0287	conserved hypothetical protein	YP_185182.2	2
1429	F08	475	SACOL0406	hypothetical protein	YP_185298.1	3.181052632
1433	F10	475	SACOL0768	lipoprotein, putative	YP_185645.1	2.591578947
1435	F11	475	SACOL1189	acetyltransferase, GNAT family	YP_186051.1	3.168421053
1437	F12	475	SACOL2090	ywpF protein	YP_186905.1	3.166315789
1439	G01	475	SACOL2091	beta-hydroxyacyl-(acyl-carrier-protein) dehydratase FabZ	YP_186906.1	2.591578947
1441	G02	475	SACOL2220	ribosomal protein L15	YP_187030.1	3.141052632
1443	G03	475	SACOL2256	transcriptional regulator, MarR family	YP_187063.1	3.166315789
1445	G04	478	SACOL0247	holin-like protein LrgA	YP_185143.1	2.569037657
1447	G05	478	SACOL0402	PTS system, IIA component	YP_185294.1	3.158995816
1450	G06	478	SACOL0736	acetyltransferase, GNAT family	YP_185615.1	2.575313808
1451	G07	478	SACOL0746	transcriptional regulator, MarR family	YP_185625.1	3.179916318
1453	G08	478	SACOL1828	conserved hypothetical protein	YP_186660.1	3.165271967
1455	G09	478	SACOL1829	conserved hypothetical protein	YP_186661.1	3.150627615
1457	G10	478	SACOL1832	crcB protein	YP_186664.1	2.569037657
1459	G11	478	SACOL2012	acetyltransferase, GNAT family	YP_186832.1	2.587866109
1463	G12	478	SACOL2360	response regulator-related protein	YP_187165.1	3.133891213
1465	H01	478	SACOL2625	conserved hypothetical protein	YP_187414.1	2.587866109
1467	H02	481	SACOL0015	ribosomal protein L9	YP_184926.1	2.56964657
1469	H03	481	SACOL1598	ComG operon competence protein, putative	YP_186438.1	2.584199584
1471	H04	481	SACOL1771	OsmC/Ohr family protein	YP_186605.1	3.130977131
1473	H05	481	SACOL1919	transcriptional regulator, Fur family	YP_186744.1	2.584199584
1475	H06	481	SACOL2264	molybdenum cofactor biosynthesis protein E	YP_187071.1	3.17047817
1478	H07	481	SACOL2384	staphylococcal accessory protein Z	YP_187188.1	3.180873181
1479	H08	484	SACOL1509	nucleoside diphosphate kinase	YP_186353.1	3.146694215
1481	H09	484	SACOL1541	transcriptional regulator, Fur family	YP_186383.1	3.188016529
1483	H10	484	SACOL1662	acetyl-CoA carboxylase, biotin carboxyl carrier protein, putative	YP_186502.1	2.588842975
1485	H11	484	SACOL2609	conserved hypothetical protein	YP_187399.1	3.181818182
1487	H12	484	SACOL2658	transcriptional regulator, ArgR family	YP_187446.1	3.175619835