

Product Information Sheet for NR-19509

***Staphylococcus aureus* (MRSA), Strain COL Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 13**

Catalog No. NR-19509

This reagent is the tangible property of the U.S. Government.

For research use only. Not for human use.

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:

Every 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-19509 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 13, NR-19509."

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/bmb15/index.htm.

Disclaimers:

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at www.beiresources.org.

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its derivatives must contact the contributor to determine if a license is required. U.S. Government contractors may need a license before first commercial sale.

Staphylococcus epidermidis Strain." J. Bacteriol. 187 (2005): 2426-2438. PubMed: 15774886.

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



References:

1. 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 and a Biofilm-Producing Methicillin-Resistant

Table 1: *Staphylococcus aureus*, Strain COL Gateway® Clones, Plate 13 (ZSAJM)¹

Clone	Well Position	ORF Length	Locus ID	Description (Gene name)	Accession Number	Average Depth of Coverage
2521	A01	739	SACOL1468	membrane protein, putative	YP_186316.1	3.51014885
2523	A02	739	SACOL1740	alkaline phosphatase synthesis transcriptional regulatory protein PhoP	YP_186577.1	3.48308525
2526	A03	739	SACOL2198	alpha-acetolactate decarboxylase	YP_187009.1	4.201623816
2527	A04	739	SACOL2594	oxidoreductase, short chain dehydrogenase/reductase family	YP_187385.1	4.230040595
2530	A05	739	SACOL2617	alpha-acetolactate decarboxylase	YP_187406.1	4.197564276
2531	A06	739	SACOL2698	phosphoribosylformimino-5-aminoimidazole carboxamide ribotide isomerase	YP_187484.1	4.219215156
2533	A07	742	SACOL0121	purine nucleoside phosphorylase	YP_185025.1	4.184636119
2535	A08	742	SACOL1500	conserved hypothetical protein	YP_186344.1	3.785714286
2537	A09	742	SACOL1631	conserved hypothetical protein	YP_186471.1	4.230458221
2539	A10	742	SACOL1708	type III leader peptidase family protein	YP_186547.1	4.21967655
2541	A11	745	SACOL0776	conserved hypothetical protein TIGR00370	YP_185651.1	3.487248322
2543	A12	745	SACOL2130	purine nucleoside phosphorylase	YP_186945.1	4.226845638
2545	B01	747	SACOL1813	IS1272-related, transposase, degenerate	n/a	4.198125837
2547	B02	748	SACOL0319	hypothetical protein	YP_185211.1	4.209893048
2549	B03	748	SACOL0421	hypothetical protein	YP_185313.1	4.197860963
2551	B04	748	SACOL0770	radical activating enzyme family protein	YP_185647.1	3.834224599
2553	B05	748	SACOL1296	transcriptional regulator, GntR family, putative	YP_186153.1	3.212566845
2557	B06	751	SACOL0236	4-diphosphocytidyl-2C-methyl-D-erythritol synthase, putative	YP_185132.1	4.223701731
2560	B07	751	SACOL0240	4-diphosphocytidyl-2C-methyl-D-erythritol synthase, putative	YP_185136.1	4.190412783
2562	B08	751	SACOL0670	conserved hypothetical protein	YP_185554.1	4.219707057
2563	B09	751	SACOL0727	conserved hypothetical protein TIGR01033	YP_185608.1	3.500665779
2566	B10	751	SACOL0873	3-dehydroquinone dehydratase, type I	YP_185745.1	4.214380826
2570	B12	751	SACOL1647	conserved hypothetical protein	YP_186487.1	3.82023968
2571	C01	751	SACOL1865	serine protease SplE, putative	YP_186693.1	3.501997337
2573	C02	751	SACOL1869	serine protease SplA	YP_186697.1	4.201065246
2575	C03	751	SACOL2026	accessory gene regulator protein A	YP_186844.1	4.218375499
2577	C04	754	SACOL0321	prophage L54a, repressor protein, putative	YP_185213.1	4.188328912
2579	C05	754	SACOL0667	hydrolase, haloacid dehalogenase-like family	YP_185551.1	3.139257294
2581	C06	754	SACOL1003	negative regulator of competence MecA, putative	YP_185871.1	4.226790451
2584	C07	754	SACOL1432	2,3,4,5-tetrahydropyridine-2,6-dicarboxylate N-succinyltransferase	YP_186284.1	3.816976127
2585	C08	754	SACOL1864	serine protease SplF, putative	YP_186692.1	4.201591512
2587	C09	754	SACOL1866	serine protease SplD, putative	YP_186694.1	4.185676393
2590	C10	754	SACOL1867	serine protease SplC	YP_186695.1	4.187002653
2591	C11	754	SACOL2736	glucose-inhibited division protein B	YP_187522.1	4.218832891
2593	C12	757	SACOL1277	uridylyl transferase	YP_186134.1	3.94319683
2595	D01	757	SACOL1431	dihydrodipicolinate reductase	YP_186283.1	4.220607662
2597	D02	757	SACOL1868	serine protease SplB	YP_186696.1	4.217965654
2599	D03	757	SACOL2608	conserved hypothetical protein	YP_187398.1	4.198150594

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Clone	Well Position	ORF Length	Locus ID	Description (Gene name)	Accession Number	Average Depth of Coverage
2601	D04	760	SACOL0119	cell wall surface anchor family protein	YP_185023.1	4.211842105
2604	D05	760	SACOL0529	conserved hypothetical protein	YP_185417.1	4.203947368
2609	D08	760	SACOL1511	methytransferase, UbiE/COQ5 family	YP_186355.1	4.215789474
2611	D09	760	SACOL1535	DNA-binding response regulator SrrA	YP_186377.1	4.217105263
2615	D10	763	SACOL0851	lipoprotein, putative	YP_185725.1	4.203145478
2618	D11	763	SACOL1409	tryptophan synthase, alpha subunit	YP_186261.1	4.190039318
2619	D12	763	SACOL1915	amino acid ABC transporter, ATP-binding protein	YP_186740.1	4.178243775
2621	E01	763	SACOL2101	ATP synthase F0, A subunit	YP_186916.1	4.191349934
2623	E02	763	SACOL2411	amino acid ABC transporter, permease protein	YP_187214.1	4.220183486
2625	E03	766	SACOL0049	conserved domain protein	YP_184959.1	4.211488251
2628	E04	766	SACOL1248	ribonuclease III	YP_186108.1	3.490861619
2629	E05	766	SACOL1353	ABC transporter, permease protein, putative	YP_186206.1	4.203655352
2631	E06	766	SACOL1538	segregation and condensation protein A	YP_186380.1	4.212793734
2633	E07	766	SACOL1950	cobryic acid synthase, putative	YP_186775.1	4.202349869
2635	E08	766	SACOL2189	transcriptional regulator, Sir2 family	YP_187000.1	4.2154047
2637	E09	766	SACOL2399	transcriptional regulator NirR	YP_187202.1	4.216710183
2639	E10	766	SACOL2410	amino acid ABC transporter, ATP-binding protein	YP_187213.1	4.178851175
2641	E11	766	SACOL2538	conserved hypothetical protein	YP_187331.1	4.208877285
2643	E12	769	SACOL0074	conserved domain protein	YP_184979.1	4.191157347
2645	F01	769	SACOL0499	conserved hypothetical protein	YP_185387.1	4.208062419
2647	F02	769	SACOL1145	sortase B	YP_186008.1	4.192457737
2649	F03	769	SACOL1245	3-oxoacyl-(acyl-carrier-protein) reductase	YP_186105.1	3.807542263
2651	F04	769	SACOL1664	conserved hypothetical protein TIGR00370	YP_186504.1	4.22756827
2653	F05	772	SACOL1256	tRNA (guanine-N1)-methyltransferase	YP_186115.1	3.225388601
2655	F06	772	SACOL1536	pseudouridine synthase	YP_186378.1	4.237046632
2657	F07	772	SACOL2306	abortive infection protein family	YP_187113.1	4.212435233
2659	F08	775	SACOL0246	response regulator LytR	YP_185142.1	4.198709677
2661	F09	775	SACOL0845	carboxylesterase	YP_185719.1	4.2
2663	F10	775	SACOL1147	RNA methyltransferase, TrmH family	YP_186010.1	4.232258065
2665	F11	775	SACOL1893	ABC transporter, ATP-binding protein	YP_186719.1	4.190967742
2667	F12	775	SACOL1993	conserved hypothetical protein	YP_186817.1	4.2
2669	G01	775	SACOL2388	transcriptional regulator, MerR family, putative	YP_187191.1	4.214193548
2671	G02	778	SACOL0031	glycerophosphoryl diester phosphodiesterase, putative	YP_184942.1	4.228791774
2673	G03	778	SACOL0690	ABC transporter, ATP-binding protein	YP_185572.1	4.200514139
2677	G04	778	SACOL1770	glycerophosphoryl diester phosphodiesterase, putative	YP_186604.1	4.222365039
2680	G05	778	SACOL2018	abortive infection protein family	YP_186837.1	4.201799486
2684	G06	778	SACOL2507	staphylococcal accessory regulator U	YP_187302.1	4.203084833
2685	G07	781	SACOL0578	RNA methyltransferase, TrmH family	YP_185464.1	3.199743918
2687	G08	784	SACOL2470	hypothetical protein	YP_187267.1	4.218112245
2690	G09	784	SACOL2472	peptide ABC transporter, ATP-binding protein	YP_187269.1	4.209183673
2691	G10	787	SACOL0096	staphylococcal accessory regulator S	YP_185001.1	4.175349428
2693	G11	787	SACOL0427	conserved hypothetical protein	YP_185318.1	4.203303685
2695	G12	787	SACOL0633	conserved hypothetical protein	YP_185518.1	4.212198221
2697	H01	787	SACOL0692	conserved hypothetical protein	YP_185574.1	4.209656925
2699	H02	787	SACOL1623	DNA repair protein RecO family	YP_186463.1	4.214739517
2701	H03	787	SACOL1634	conserved hypothetical protein TIGR00046	YP_186474.1	4.195679797
2703	H04	787	SACOL1660	LamB/YcsF family protein	YP_186500.1	4.191867853
2705	H05	790	SACOL0061	conserved domain protein	YP_184966.1	5.301265823
2707	H06	790	SACOL0120	transcriptional regulator, GntR family	YP_185024.1	5.301265823
2709	H07	790	SACOL0205	pyruvate formate-lyase-activating enzyme	YP_185104.1	4.718987342
2711	H08	790	SACOL0453	NAD(P)H-flavin oxidoreductase, putative	YP_185343.1	5.302531646
2713	H09	790	SACOL1545	oxidoreductase, short-chain dehydrogenase/reductase family	YP_186387.1	5.313924051

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Clone	Well Position	ORF Length	Locus ID	Description (Gene name)	Accession Number	Average Depth of Coverage
2716	H10	790	SACOL2188	lactose phosphotransferase system repressor	YP_186999.1	5.278481013
2717	H11	793	SACOL0201	DNA-binding response regulator, AraC family	YP_185100.1	5.30517024
2719	H12	793	SACOL0616	glucosamine-6-phosphate isomerase	YP_185501.1	4.756620429

¹25 clones in the *Staphylococcus aureus* (MRSA), Strain COL Gateway® Clone Set (Plates 1-25), Recombinant in *Escherichia coli*, have been physically removed from the clone set due to international distribution limitations set by U.S. Department of Commerce restrictions (Commerce Control List).