

***Staphylococcus aureus* (MRSA), Strain COL Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 12**

Catalog No. NR-19508

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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-19508 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 12, NR-19508.”

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.

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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 and a Biofilm-Producing Methicillin-Resistant

Table 1: *Staphylococcus aureus*, Strain COL Gateway® Clones, Plate 12 (ZSAJL)¹

Clone	Well Position	ORF Length	Locus ID	Description (Gene name)	Accession Number	Average Depth of Coverage
2317	A01	691	SACOL2439	lipoprotein, putative	YP_187240.1	3.487698987
2319	A02	694	SACOL0264	ABC transporter, ATP-binding protein	YP_185159.1	4.208933718
2321	A03	694	SACOL0505	ABC transporter, permease protein	YP_185393.1	4.201729107
2323	A04	694	SACOL1451	DNA-binding response regulator ArlR	YP_186303.1	4.182997118
2325	A05	694	SACOL1492	endonuclease III	YP_186336.1	4.239193084
2327	A06	694	SACOL1518	cytidylate kinase	YP_186361.1	4.191642651
2329	A07	694	SACOL2436	conserved hypothetical protein	YP_187237.1	3.606628242
2331	A08	697	SACOL0123	deoxyribose-phosphate aldolase	YP_185027.1	2.664275466
2335	A09	697	SACOL0603	deoxynucleoside kinase family protein	YP_185489.1	3.044476327
2337	A10	697	SACOL1096	TrkA potassium uptake family protein	YP_185960.1	4.219512195
2340	A11	697	SACOL2040	conserved hypothetical protein	YP_186857.1	4.235294118
2341	A12	697	SACOL2129	deoxyribose-phosphate aldolase	YP_186944.1	3.81348637
2343	B01	697	SACOL2462	ABC transporter, ATP-binding protein	YP_187260.1	4.210903874
2350	B02	700	SACOL2136	conserved hypothetical protein	YP_186951.1	4.208571429
2351	B03	700	SACOL2356	ABC transporter, ATP-binding protein	YP_187161.1	4.235714286
2353	B04	700	SACOL2646	DNA-binding response regulator	YP_187434.1	3.838571429
2355	B05	703	SACOL0136	capsular polysaccharide biosynthesis protein Cap5A	YP_185036.1	2.487908962
2357	B06	703	SACOL0315	N-acetylmannosamine-6-P epimerase, putative	YP_185207.1	4.231863442
2360	B07	703	SACOL0772	exsB protein	YP_185649.1	3.820768137
2361	B08	703	SACOL1675	TPR domain protein	YP_186515.1	3.493598862
2363	B09	703	SACOL1716	uroporphyrinogen-III synthase	YP_186554.1	3.507823613
2365	B10	706	SACOL1077	phosphoribosylformylglycinamide synthase I	YP_185941.1	3.225212465
2367	B11	706	SACOL2123	conserved hypothetical protein	YP_186938.1	2.804532578
2369	B12	706	SACOL2271	molybdenum ABC transporter, permease protein ModB	YP_187078.1	3.223796034
2371	C01	706	SACOL2534	NAD(P)H-flavin oxidoreductase	YP_187327.1	3.16572238
2373	C02	709	SACOL0028	IS431mec, transposase	YP_184939.1	4.211565585
2375	C03	709	SACOL0244	ScdA protein	YP_185140.1	4.208744711
2377	C04	709	SACOL0279	hypothetical protein	YP_185174.1	2.794076164
2379	C05	709	SACOL0498	PAP2 family protein	YP_185386.1	2.503526093
2383	C06	709	SACOL1201	conserved hypothetical protein TIGR00044	YP_186063.1	4.04090268
2385	C07	709	SACOL2358	DNA-binding response regulator	YP_187163.1	3.878702398
2391	C09	712	SACOL1617	conserved hypothetical protein	YP_186457.1	3.105337079
2393	C10	712	SACOL2392	respiratory nitrate reductase, gamma subunit	YP_187195.1	3.404494382
2397	C12	715	SACOL1995	conserved hypothetical protein	YP_186819.1	4.187412587
2399	D01	715	SACOL2516	gluconate operon transcriptional repressor	YP_187310.1	4.213986014
2401	D02	715	SACOL2545	L-serine dehydratase, iron-sulfur-dependent, beta subunit	YP_187337.1	2.981818182
2403	D03	718	SACOL0283	lipoprotein, putative	YP_185178.1	4.22005571
2405	D04	718	SACOL0290	lipoprotein, putative	YP_185184.1	3.509749304

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Clone	Well Position	ORF Length	Locus ID	Description (Gene name)	Accession Number	Average Depth of Coverage
2409	D06	718	SACOL0602	hydrolase, haloacid dehalogenase-like family	YP_185488.1	3.814763231
2411	D07	718	SACOL0716	DNA-binding response regulator	YP_185598.1	2.791086351
2413	D08	718	SACOL0742	conserved hypothetical protein	YP_185621.1	4.228412256
2415	D09	718	SACOL1141	NPQTN cell wall surface anchor protein	YP_186004.1	3.544568245
2418	D10	718	SACOL2160	hemolysin III, putative	YP_186972.1	4.213091922
2419	D11	721	SACOL0137	capsular polysaccharide biosynthesis protein Cap5B	YP_185037.1	3.490984743
2421	D12	721	SACOL0766	DNA-binding response regulator SaeR	YP_185643.1	4.235783634
2424	E01	721	SACOL0860	thermonuclease precursor	YP_185733.1	3.513176144
2425	E02	721	SACOL1493	DNA replication protein DnaD, putative	YP_186337.1	3.359223301
2427	E03	721	SACOL1646	comE operon protein 1-related protein	YP_186486.1	3.493758669
2429	E04	721	SACOL1655	5-methylthioadenosine/S-adenosylhomocysteine nucleosidase	YP_186495.1	2.485436893
2431	E05	721	SACOL1707	DNA repair protein RadC	YP_186546.1	4.217753121
2433	E06	721	SACOL2329	ribose 5-phosphate isomerase	YP_187136.1	3.53259362
2435	E07	721	SACOL2415	phosphoglycerate mutase	YP_187218.1	3.493758669
2437	E08	721	SACOL2428	dethiobiotin synthase	YP_187230.1	2.338418863
2441	E10	721	SACOL2653	transcriptional regulator, Crp/Fnr family	YP_187441.1	3.833564494
2445	E11	724	SACOL0735	conserved hypothetical protein	YP_185614.1	4.23480663
2447	E12	724	SACOL2086	transcriptional regulator, TenA family	YP_186902.1	3.490331492
2449	F01	724	SACOL2284	urease accessory protein UreF	YP_187091.1	3.685082873
2451	F02	724	SACOL2554	membrane protein, putative	YP_187346.1	2.809392265
2453	F03	727	SACOL0114	capsular polysaccharide biosynthesis glycosyltransferase, putative	YP_185018.1	3.103163686
2456	F04	727	SACOL0584	ribosomal protein L1	YP_185470.1	4.21045392
2457	F05	727	SACOL1216	orotidine 5-phosphate decarboxylase	YP_186079.1	4.214580468
2459	F06	727	SACOL1873	epidermin immunity protein F	YP_186701.1	2.796423659
2461	F07	727	SACOL1967	geranylgeranylglyceryl phosphate synthase family protein	YP_186791.1	4.074277854
2463	F08	727	SACOL2304	conserved domain protein	YP_187111.1	4.132049519
2465	F09	727	SACOL2424	6-carboxyhexanoate--CoA ligase	YP_187226.1	4.235213205
2467	F10	727	SACOL2518	conserved hypothetical protein	YP_187312.1	4.19394773
2469	F11	727	SACOL2678	conserved hypothetical protein	YP_187466.1	3.526822558
2471	F12	727	SACOL2686	capsular polysaccharide biosynthesis protein Cap1B	YP_187473.1	2.775790922
2473	G01	730	SACOL0010	AziC family protein	YP_184921.1	3.2
2475	G02	730	SACOL0340	conserved hypothetical protein	YP_185232.1	2.77260274
2480	G04	730	SACOL0883	ABC transporter, permease protein	YP_185754.1	4.226027397
2482	G05	730	SACOL1188	hydrolase, haloacid dehalogenase-like family	YP_186050.1	4.209589041
2484	G06	730	SACOL1803	pseudouridine synthase, family 1	YP_186636.1	4.205479452
2485	G07	730	SACOL2071	DNA-binding response regulator KdpE	YP_186887.1	2.505479452
2487	G08	730	SACOL2088	sceD protein, putative	YP_186903.1	3.493150685
2489	G09	730	SACOL2450	amino acid ABC transporter, permease protein	YP_187249.1	4.197260274
2491	G10	730	SACOL2488	oxidoreductase, short-chain dehydrogenase/reductase family	YP_187284.1	4.197260274
2493	G11	730	SACOL2525	ABC transporter, ATP-binding protein	YP_187319.1	3.482191781
2498	H01	733	SACOL1629	conserved hypothetical protein	YP_186469.1	4.208731241
2500	H02	733	SACOL1871	epidermin immunity protein F	YP_186699.1	4.215552524
2501	H03	736	SACOL0007	YjeF-related protein	YP_184918.1	4.182065217
2504	H04	736	SACOL0019	DNA-binding response regulator YycF	YP_184930.1	4.168478261
2505	H05	736	SACOL0248	IrgB protein	YP_185144.1	4.210597826
2507	H06	736	SACOL1414	peptide ABC transporter, ATP-binding protein	YP_186266.1	4.216032609
2509	H07	736	SACOL1944	conserved hypothetical protein	YP_186769.1	4.201086957
2511	H08	736	SACOL2584	immunodominant antigen A	YP_187376.1	4.201086957

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Clone	Well Position	ORF Length	Locus ID	Description (Gene name)	Accession Number	Average Depth of Coverage
2513	H09	739	SACOL0249	transcriptional regulator, GntR family	YP_185145.1	4.196211096
2516	H10	739	SACOL0463	hypothetical protein	YP_185353.1	4.182679296
2517	H11	739	SACOL1075	phosphoribosylaminoimidazole-succinocarboxamide synthase	YP_185939.1	4.200270636
2519	H12	739	SACOL1299	acetoacetyl-CoA reductase, putative	YP_186156.1	4.202976996

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).