

***Mycobacterium tuberculosis* Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 16**

Catalog No. NR-19652

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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 *Mycobacterium tuberculosis* (*M. tuberculosis*), Gateway® clone set consists of 42 plates which contain 3724 sequence validated clones (3294 *M. tuberculosis*, strain H37Rv clones supplemented with 430 unique open reading frames (ORF) from *M. tuberculosis*, strain CDC1551) cloned in *Escherichia coli* (*E. coli*) DH10B-T1 cells. Each ORF was recombined in vector pDONR™221 with an ATG start codon and no stop codon. The sequence was validated by full length sequencing of each entry 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.

Plate orientation and viability were confirmed for NR-19652.

Material Provided:

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

Packaging/Storage:

NR-19652 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: 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: *Mycobacterium tuberculosis* Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 16, NR-19652."

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:

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References:

1. Cole, S. T., et al. "Deciphering the Biology of *Mycobacterium tuberculosis* from the Complete Genome Sequence." *Nature* 393 (1998): 537-544. PubMed: 9634230.
2. Camus, J. C., et al. "Re-Annotation of the Genome Sequence of *Mycobacterium tuberculosis* H37Rv." *Microbiology* 148 (2002): 2967-2973. PubMed: 12368430.

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Table 1: *Mycobacterium tuberculosis*, Gateway® Clones, Plate 16 (ZMTLF)¹

Clone	Well Position	ORF Length	Locus ID	Description	Accession Number	Average Depth of Coverage
40804	A01	454	Rv2475c	hypothetical protein Rv2475c	NP_216991.1	2
40799	A02	454	Rv0841c	transmembrane protein	YP_177634.1	3.169603524
40797	A03	454	Rv0708	50S ribosomal protein L16	NP_215222.1	2
40814	A04	457	Rv2199c	integral membrane protein	NP_216715.1	2
40808	A05	457	Rv0760c	hypothetical protein Rv0760c	NP_215274.1	2
40821	A06	457	Rv2887	transcriptional regulatory protein	NP_217403.1	2
40815	A07	457	Rv2341	lipoprotein LppQ	NP_216857.1	2
40813	A08	457	Rv1982c	hypothetical protein Rv1982c	NP_216498.1	1.98249453
40807	A09	457	Rv0022c	transcriptional regulatory protein WHIB-like WHIB5	NP_214536.1	2
40820	A10	457	Rv2762c	hypothetical protein Rv2762c	NP_217278.1	2
40819	A11	457	Rv2551c	hypothetical protein Rv2551c	NP_217067.1	2
40817	A12	457	Rv2437	hypothetical protein Rv2437	NP_216953.1	1.81619256
40809	B01	457	Rv0965c	hypothetical protein Rv0965c	NP_215480.1	2
40810	B02	457	Rv1064c	lipoprotein LpqV	NP_215580.1	1.93654267
40822	B03	457	Rv3259	hypothetical protein Rv3259	NP_217776.1	2
40825	B04	457	Rv3601c	aspartate alpha-decarboxylase	NP_218118.1	2
40818	B05	457	Rv2530c	hypothetical protein Rv2530A	YP_177672.1	2
40829	B06	460	Rv0474	transcriptional regulatory protein	NP_214988.1	2.104347826
40833	B07	460	Rv1847	hypothetical protein Rv1847	NP_216363.1	2
40827	B08	460	Rv0451c	membrane protein	NP_214965.1	2
40830	B09	460	Rv0816c	thioredoxin ThiX	NP_215331.1	-
40834	B10	460	Rv1881c	lipoprotein LppE	NP_216397.1	2
40836	B11	460	Rv2513	hypothetical protein Rv2513	NP_217029.1	2
40826	B12	460	Rv0390	hypothetical protein Rv0390	NP_214904.1	2
40835	C01	460	Rv2261c	hypothetical protein Rv2261c	NP_216777.1	2
10040	C02	460	Rv2219A	hypothetical protein Rv2219A	YP_177661.1	3.906521739
40850	C03	463	Rv2620c	transmembrane protein	NP_217136.1	3.177105832
40852	C04	463	Rv3064c	integral membrane protein	NP_217580.1	2
40845	C05	463	Rv0866	molybdenum cofactor biosynthesis protein E2	NP_215381.1	2
40846	C06	463	Rv1160	7,8-dihydro-8-oxoguanine-triphosphatase	NP_215676.1	2
40849	C07	463	Rv2494	hypothetical protein Rv2494	NP_217010.1	2
40839	C09	463	Rv0061	hypothetical protein Rv0061	NP_214575.1	2
40862	C10	466	Rv0749	hypothetical protein Rv0749	NP_215263.1	2
40861	C11	466	Rv0677c	hypothetical protein Rv0677c	NP_215191.1	2
40857	C12	466	Rv0441c	hypothetical protein Rv0441c	NP_214955.1	3.096566524
40870	D01	466	Rv3320c	hypothetical protein Rv3320c	NP_217837.1	2
40867	D02	466	Rv2406c	hypothetical protein Rv2406c	NP_216922.1	3.072961373
40854	D03	466	Rv0277c	hypothetical protein Rv0277c	NP_214791.1	2.650214592
40868	D04	466	Rv2704	hypothetical protein Rv2704	NP_217220.1	2

Clone	Well Position	ORF Length	Locus ID	Description	Accession Number	Average Depth of Coverage
40869	D05	466	Rv3142c	hypothetical protein Rv3142c	NP_217658.1	-
40863	D06	466	Rv1987	chitinase	NP_216503.1	2
40855	D07	466	Rv0403c	membrane protein	NP_214917.1	2
40858	D08	466	Rv0636	(3R)-hydroxyacyl-ACP dehydratase subunit HadB	NP_215150.1	2
40874	D09	469	Rv1242	hypothetical protein Rv1242	NP_215758.1	2
40881	D10	469	Rv2166c	cell division protein MraZ	NP_216682.1	2
40883	D11	469	Rv2599	hypothetical protein Rv2599	NP_217115.1	3.085287846
40877	D12	469	Rv1897c	D-tyrosyl-tRNA(Tyr) deacylase	NP_216413.1	2
40886	E01	469	Rv2645	hypothetical protein Rv2645	NP_217161.1	2.569296375
40872	E02	469	Rv0880	MarR family transcriptional regulator	NP_215395.1	2
40888	E03	469	Rv3217c	integral membrane protein	NP_217733.1	3.232409382
40878	E04	469	Rv1904	hypothetical protein Rv1904	NP_216420.1	2
40875	E05	469	Rv1546	hypothetical protein Rv1546	NP_216062.1	2
40871	E06	469	Rv0188	transmembrane protein	NP_214702.1	2
40884	E07	469	Rv2626c	hypothetical protein Rv2626c	NP_217142.1	2
40873	E08	469	Rv0997	hypothetical protein Rv0997	NP_215512.1	2
40876	E09	469	Rv1813c	hypothetical protein Rv1813c	NP_216329.1	2.33901919
40880	E10	469	Rv2011c	hypothetical protein Rv2011c	NP_216527.1	3.221748401
9956	E11	469	Rv2307B	glycine rich protein	YP_177666.1	3.752665245
40895	E12	472	Rv1081c	hypothetical protein Rv1081c	NP_215597.1	2
40899	F01	472	Rv1487	hypothetical protein Rv1487	NP_216003.1	2
40903	F02	472	Rv2185c	hypothetical protein Rv2185c	NP_216701.1	3.569915254
40897	F03	472	Rv1088	PE family protein	YP_177784.1	3.163135593
40901	F04	472	Rv2031c	heat shock protein hspX	NP_216547.1	2
40898	F05	472	Rv1262c	HIT-like protein	NP_215778.1	2
40906	F06	472	Rv3369	hypothetical protein Rv3369	NP_217886.1	2
40905	F07	472	Rv3317	succinate dehydrogenase hydrophobic membrane anchor subunit SdhD	NP_217834.1	2
40904	F08	472	Rv3180c	hypothetical protein Rv3180c	NP_217696.1	2
40900	F09	472	Rv1532c	hypothetical protein Rv1532c	NP_216048.1	2
40902	F10	472	Rv2103c	hypothetical protein Rv2103c	NP_216619.1	2
40894	F11	472	Rv0910	hypothetical protein Rv0910	NP_215425.1	2
40893	F12	472	Rv0771	4-carboxymuconolactone decarboxylase	NP_215285.1	2
10044	G01	472	Rv2306B	hypothetical protein Rv2306B	YP_177664.1	3.186440678
40915	G02	475	Rv3697c	hypothetical protein Rv3697c	NP_218214.1	2.932631579
40911	G03	475	Rv0661c	hypothetical protein Rv0661c	NP_215175.1	3.193684211
40914	G04	475	Rv3162c	integral membrane protein	NP_217678.1	1.593684211
40913	G05	475	Rv3103c	hypothetical protein Rv3103c	NP_217619.1	2
40907	G06	475	Rv0008c	hypothetical protein Rv0008c	NP_214522.1	2
40909	G07	475	Rv0360c	hypothetical protein Rv0360c	NP_214874.1	2
40912	G08	475	Rv1873	hypothetical protein Rv1873	NP_216389.1	2
40908	G09	475	Rv0240	hypothetical protein Rv0240	NP_214754.1	2
40918	G10	478	Rv1334	hypothetical protein Rv1334	NP_215850.1	2
40916	G11	478	Rv0723	50S ribosomal protein L15	NP_215237.1	3.487447699
40919	G12	478	Rv1615	hypothetical protein Rv1615	NP_216131.1	2
40925	H01	478	Rv2617c	hypothetical protein Rv2617c	NP_217133.1	2
40920	H02	478	Rv1636	hypothetical protein Rv1636	NP_216152.1	2
40927	H03	478	Rv3334	MerR family transcriptional regulator	NP_217851.1	2
40926	H04	478	Rv3108	hypothetical protein Rv3108	NP_217624.1	2
40924	H05	478	Rv2602	hypothetical protein Rv2602	NP_217118.1	2
40923	H06	478	Rv2175c	putative regulatory protein	NP_216691.1	1.966527197
10005	H07	478	Rv0470A	mycolic acid synthase pcaA (cyclopropane synthase)	YP_177730.1	2
40928	H08	481	Rv0426c	hypothetical protein Rv0426c	NP_214940.1	1.98960499

Clone	Well Position	ORF Length	Locus ID	Description	Accession Number	Average Depth of Coverage
40932	H09	481	Rv0854	hypothetical protein Rv0854	NP_215369.1	2.565488565
40939	H10	481	Rv2537c	3-dehydroquinate dehydratase	NP_217053.1	2
40940	H12	481	Rv2872	hypothetical protein Rv2872	NP_217388.1	2

¹All information in this table was provided by J. Craig Venter Institute at the time of deposition.