

***Mycobacterium tuberculosis* Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 15**

Catalog No. NR-19651

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Contributor:

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

Manufacturer:

BEI Resources

Product Description:

Clone plates are replicated using a BioMek® FX robot. 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 only confirms the clone plate orientation and viability of randomly picked clones. BEI Resources does not confirm or validate individual clone identities 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-19651.

Material Provided:

Each well of the 96-well plate contains approximately 40 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-19651 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: *Mycobacterium tuberculosis* Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 15, NR-19651.”

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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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 15 (ZMTLE)¹

Clone	Well Position	ORF Length	Locus ID	Description (Gene name)	Accession Number	Average Depth of Coverage
40645	A01	427	Rv1871c	hypothetical protein Rv1871c	NP_216387.1	2
40637	A02	427	Rv0870c	hypothetical protein Rv0870c	NP_215385.1	2
40656	A03	427	Rv3541c	hypothetical protein Rv3541c	NP_218058.1	1.5971897
40642	A04	427	Rv1643	50S ribosomal protein L20	NP_216159.1	2
40639	A05	427	Rv1034c	transposase	NP_215550.1	2.20140515
40651	A06	427	Rv2661c	hypothetical protein Rv2661c	NP_217177.1	2
40654	A07	427	Rv3354	hypothetical protein Rv3354	NP_217871.1	2
40646	A08	427	Rv2186c	hypothetical protein Rv2186c	NP_216702.1	2
40647	A09	427	Rv2556c	hypothetical protein Rv2556c	NP_217072.1	2.56206089
40630	A10	427	Rv0076c	hypothetical protein Rv0076c	NP_214590.1	2.57142857
40644	A11	427	Rv1720c	hypothetical protein Rv1720c	NP_216236.1	2.60421546
40648	A12	427	Rv2562	hypothetical protein Rv2562	NP_217078.1	2
40634	B01	427	Rv0786c	hypothetical protein Rv0786c	NP_215300.1	3.05854801
40652	B02	427	Rv2705c	hypothetical protein Rv2705c	NP_217221.1	2
9966	B03		Rv3705A	hypothetical protein Rv3705c	NP_218222.1	
40664	B04	430	Rv1671	hypothetical protein Rv1671	NP_216187.1	2.57209302
40658	B05	430	Rv0396	hypothetical protein Rv0396	NP_214910.1	3.24418605
40666	B06	430	Rv2523c	4'-phosphopantetheinyl transferase	NP_217039.1	2
40659	B07	430	Rv0595c	hypothetical protein Rv0595c	NP_215109.1	2
40662	B08	430	Rv0847	lipoprotein LpqS	NP_215362.1	2.9
40665	B09	430	Rv2359	ferric uptake regulation protein FURB	NP_216875.1	2
40660	B10	430	Rv0652	50S ribosomal protein L7/L12	NP_215166.1	3.44651163
40661	B11	430	Rv0827c	transcriptional regulatory protein	NP_215342.1	2
40674	B12	430	Rv3750c	excisionase	NP_218267.1	2.92325581
40673	C01	430	Rv3384c	hypothetical protein Rv3384c	NP_217901.1	3.05116279
40671	C02		Rv3364c	hypothetical protein Rv3364c	NP_217881.1	
40689	C03	433	Rv2759c	hypothetical protein Rv2759c	NP_217275.1	2
40682	C04	433	Rv1066	hypothetical protein Rv1066	NP_215582.1	2
40676	C05	433	Rv0034	hypothetical protein Rv0034	NP_214548.1	3.18013857
40683	C06	433	Rv1224	sec-independent translocase	NP_215740.1	2
40690	C07	433	Rv3110	pterin-4- α -carbinolamine dehydratase MoaB1	YP_177926.1	2.4665127
40691	C08	433	Rv3742c	oxidoreductase	NP_218259.1	2
40685	C09		Rv1581c	phiRv1 phage protein		
40686	C10	433	Rv1838c	hypothetical protein Rv1838c	NP_216354.1	2
40680	C11	433	Rv0624	hypothetical protein Rv0624	NP_215138.1	2.59122402
40687	C12	433	Rv2183c	hypothetical protein Rv2183c	NP_216699.1	-
40688	D01	433	Rv2549c	hypothetical protein Rv2549c	NP_217065.1	2

Clone	Well Position	ORF Length	Locus ID	Description (Gene name)	Accession Number	Average Depth of Coverage
40697	D02	436	Rv2451	hypothetical protein Rv2451	NP_216967.1	2
40695	D03	436	Rv1616	hypothetical protein Rv1616	NP_216132.1	2
40696	D04	436	Rv2010	hypothetical protein Rv2010	NP_216526.1	2
40692	D05	436	Rv0718	30S ribosomal protein S8	NP_215232.1	2
40698	D06	436	Rv3069	camphor resistance protein CrcB	NP_217585.1	2
40700	D07	436	Rv3135	PPE family protein	YP_177934.1	2.5733945
40728	D08	439	Rv3716c	hypothetical protein Rv3716c	NP_218233.1	2.65831435
40711	D09	439	Rv1414	hypothetical protein Rv1414	NP_215930.1	2
40712	D10	439	Rv1744c	hypothetical protein Rv1744c	NP_216260.1	2
40704	D11		Rv0065	hypothetical protein Rv0065	NP_214579.1	
40718	D12	439	Rv2600	integral membrane protein	NP_217116.1	3.14578588
40713	E01	439	Rv1947	hypothetical protein Rv1947	NP_216463.1	2
40707	E02		Rv0617	hypothetical protein Rv0617	NP_215131.1	
40716	E03	439	Rv2527	hypothetical protein Rv2527	NP_217043.1	2
40726	E04	439	Rv3607c	dihydroneopterin aldolase FolB	YP_177996.1	2.58997722
40721	E05	439	Rv3078	hydroxylaminobenzene mutase HAB	NP_217594.1	2
40706	E06	439	Rv0609	hypothetical protein Rv0609	NP_215123.1	2.59453303
40717	E07	439	Rv2532c	hypothetical protein Rv2532c	NP_217048.1	-
40722	E08	439	Rv3143	response regulator	NP_217659.1	2
40732	E09	442	Rv1826	glycine cleavage system protein H	NP_216342.1	2
40737	E10	442	Rv2774c	hypothetical protein Rv2774c	NP_217290.1	2
40735	E11	442	Rv2169c	transmembrane protein	NP_216685.1	2
40740	E12	442	Rv3852	histone-like protein HNS	NP_218369.1	2
40730	F01	442	Rv0856	hypothetical protein Rv0856	NP_215371.1	2
40734	F02	442	Rv2061c	hypothetical protein Rv2061c	NP_216577.1	2
40733	F03	442	Rv1903	hypothetical protein Rv1903	NP_216419.1	3.57239819
40736	F04	442	Rv2596	hypothetical protein Rv2596	NP_217112.1	2
40729	F05	442	Rv0395	hypothetical protein Rv0395	NP_214909.1	2
40731	F06	442	Rv1561	hypothetical protein Rv1561	NP_216077.1	2
40750	F07	445	Rv1976c	hypothetical protein Rv1976c	NP_216492.1	2
40753	F08	445	Rv2358	ArsR family transcriptional regulator	NP_216874.1	3.51235955
40745	F09	445	Rv1042c	IS like-2 transposase	NP_215558.1	2.15955056
40743	F10	445	Rv0871	cold shock-like protein B CspB	NP_215386.1	2
40749	F11	445	Rv1962c	hypothetical protein Rv1962c	NP_216478.1	2.18651685
40746	F12	445	Rv1149	transposase	NP_215665.1	2
40748	G01	445	Rv1914c	hypothetical protein Rv1914c	NP_216430.1	2
40747	G02	445	Rv1891	hypothetical protein Rv1891	NP_216407.1	2
40752	G03	445	Rv2233	hypothetical protein Rv2233	NP_216748.2	3.16629213
40741	G04	445	Rv0582	hypothetical protein Rv0582	NP_215096.1	2.57303371
40742	G05	445	Rv0627	hypothetical protein Rv0628c	NP_215142.1	2
40766	G06	448	Rv1444c	hypothetical protein Rv1444c	NP_215960.1	2
40773	G07	448	Rv2445c	nucleoside diphosphate kinase	NP_216961.1	2
40775	G08	448	Rv3067	hypothetical protein Rv3067	NP_217583.1	2
40774	G09	448	Rv2674	hypothetical protein Rv2674	NP_217190.1	2
40767	G10	448	Rv1542c	hemoglobin glbN	NP_216058.1	2
40772	G11	448	Rv2432c	hypothetical protein Rv2432c	NP_216948.1	2
40769	G12	448	Rv1573	phiRV1 phage protein	NP_216089.1	3.20089286
40763	H01	448	Rv0420c	transmembrane protein	NP_214934.1	2
40778	H02	448	Rv3412	hypothetical protein Rv3412	NP_217929.1	2
40757	H03	448	Rv0141c	hypothetical protein Rv0141c	NP_214655.1	2.59151786
40756	H04	448	Rv0095c	hypothetical protein Rv0095c	NP_214609.1	2
40781	H05	451	Rv0549c	hypothetical protein Rv0549c	NP_215063.1	2.57871397
40787	H06	451	Rv2137c	hypothetical protein Rv2137c	NP_216653.1	2

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40782	H07	451	Rv0598c	hypothetical protein Rv0598c	NP_215112.1	2
40791	H08	451	Rv2923c	hypothetical protein Rv2923c	NP_217439.1	3.23281596
40786	H09	451	Rv2074	hypothetical protein Rv2074	NP_216590.1	3.09534368
40792	H10	451	Rv3288c	hypothetical protein Rv3288c	NP_217805.1	2
40796	H11	451	Rv3840	transcriptional regulatory protein	NP_218357.1	3.10864745
40805	H12	454	Rv2757c	hypothetical protein Rv2757c	NP_217273.1	3.22907489

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