

***Mycobacterium tuberculosis* Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 17**

**Catalog No. NR-19653**

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

**For research use only. Not for use in humans.**

**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-19653.

**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-19653 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 1 day.

**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 17, NR-19653.”

**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 \(BMBL\)](#), 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

**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 17 (ZMTLG)<sup>1</sup>**

Clone	Well Position	ORF Length	Locus ID	Description	Accession Number	Average Depth of Coverage
40933	A01	481	Rv1155	hypothetical protein	NP_215671.1	2
40930	A02	481	Rv0506	membrane protein	NP_215020.1	2.584199584
40936	A03	481	Rv1632c	hypothetical protein	NP_216148.1	1.98960499
40941	A04	481	Rv2910c	hypothetical protein	NP_217426.1	2
40945	A05	481	Rv3718c	hypothetical protein	NP_218235.1	2
40944	A06	481	Rv3443c	50S ribosomal protein L13	NP_217960.1	2.74012474
40942	A07	481	Rv3119	molybdenum cofactor biosynthesis protein E	YP_177931.1	2
40947	A08	484	Rv0477	hypothetical protein	NP_214991.1	2
40946	A09	484	Rv0455c	hypothetical protein	NP_214969.1	-
40952	A10	484	Rv2324	AsnC family transcriptional regulator	NP_216840.1	2
40954	A11	484	Rv2709	transmembrane protein	NP_217225.1	2
40953	A12	484	Rv2638	hypothetical protein	NP_217154.1	1.989669421
40951	B01	484	Rv1558	hypothetical protein	NP_216074.1	3.185950413
40958	B02	487	Rv1752	hypothetical protein	NP_216268.1	3.106776181
40956	B03	487	Rv1261c	hypothetical protein	NP_215777.1	2
40967	B04	487	Rv3527	hypothetical protein	NP_218044.1	2
40955	B05	487	Rv0912	transmembrane protein	NP_215427.1	2
40963	B06	487	Rv2740	hypothetical protein	NP_217256.1	3.151950719
40960	B07	487	Rv1778c	hypothetical protein	NP_216294.1	3.156057495
40966	B08	487	Rv3486	hypothetical protein	NP_218003.1	2
40968	B09	487	Rv3901c	hypothetical protein	NP_218418.1	2
40961	B10	487	Rv1956	transcriptional regulatory protein	NP_216472.1	2
40971	B11	490	Rv2297	hypothetical protein	NP_216813.1	2
40976	B12	490	Rv3291c	AsnC family transcriptional regulator	NP_217808.1	2.589795918
40969	C01	490	Rv1909c	ferric uptake regulation protein furA (fur)	NP_216425.1	2
40973	C02	490	Rv3052c	ribonucleotide reductase stimulatory protein	NP_217568.1	2
40975	C03	490	Rv3181c	hypothetical protein	NP_217697.1	2
40972	C04	490	Rv2771c	hypothetical protein	NP_217287.1	2
40974	C05	490	Rv3098c	hypothetical protein	NP_217614.1	2
40970	C06	490	Rv1946c	lipoprotein	NP_216462.1	2
40983	C07	493	Rv3547	hypothetical protein	NP_218064.1	2
10068	C08	496	Rv1322A	hypothetical protein	YP_177643.1	2.889112903
10116	C09	505	Rv2803	hypothetical protein	YP_177678.1	3.099009901
9948	C10	523	Rv0164	hypothetical protein	YP_177617.1	2.738049713
41062	C11	526	Rv1465	nitrogen fixation related protein	NP_215981.1	2
41063	C12	526	Rv1827	hypothetical protein	NP_216343.1	2
41068	D01	526	Rv3583c	transcription factor	NP_218100.1	2
41067	D02	526	Rv2909c	30S ribosomal protein S16	NP_217425.1	1.990494297
41069	D03	526	Rv3628	inorganic pyrophosphatase	NP_218145.1	2
41061	D04	526	Rv0875c	hypothetical protein	NP_215390.1	3.133079848
41059	D05	526	Rv0471c	hypothetical protein	NP_214985.1	2
41087	D06	529	Rv3258c	hypothetical protein	NP_217775.1	3.132325142

Clone	Well Position	ORF Length	Locus ID	Description	Accession Number	Average Depth of Coverage
41081	D07	529	Rv1628c	hypothetical protein	NP_216144.1	2.631379962
41078	D08	529	Rv0580c	hypothetical protein	NP_215094.1	2.139886578
41090	D09	529	Rv3844	transposase	NP_218361.1	3.172022684
41089	D10	529	Rv3348	transposase	NP_217865.1	3.13610586
41076	D11	529	Rv0566c	putative nucleotide-binding protein	NP_215080.1	2
41073	D12	529	Rv0310c	hypothetical protein	NP_214824.1	2
41079	E01	529	Rv1284	hypothetical protein	NP_215800.1	2
41082	E02	529	Rv2234	phosphotyrosine protein phosphatase PTPA (protein-tyrosine-phosphatase) (PTPase) (LMW phosphatase)	NP_216750.1	2
41085	E03	529	Rv2991	hypothetical protein	NP_217507.1	2
41092	E04	532	Rv0054	single-stranded DNA-binding protein	NP_214568.1	3.065789474
41095	E05	532	Rv1080c	transcription elongation factor GreA	NP_215596.1	2
41099	E06	532	Rv1961	hypothetical protein	NP_216477.1	2
41101	E07	532	Rv2598	hypothetical protein	NP_217114.1	2
41102	E08	532	Rv2717c	hypothetical protein	NP_217233.1	2
41097	E09	532	Rv1120c	hypothetical protein	NP_215636.1	2.114661654
41100	E10	532	Rv2012	hypothetical protein	NP_216528.1	2
41098	E11	532	Rv1829	hypothetical protein	NP_216345.1	2
41110	E12	535	Rv1382	export or membrane protein	NP_215898.1	2
41120	F01	535	Rv3807c	transmembrane protein	NP_218324.1	2
41115	F02	535	Rv1932	thiol peroxidase	NP_216448.1	3.153271028
41109	F03	535	Rv1316c	methylated-DNA--protein-cysteine methyltransferase	NP_215832.1	2
41111	F04	535	Rv1528c	polyketide synthase associated protein	NP_216044.1	2
41108	F06	535	Rv0737	transcriptional regulatory protein	NP_215251.1	2
41105	F07	535	Rv0678	hypothetical protein	NP_215192.1	2.895327103
41107	F08	535	Rv0679c	putative threonine rich protein	NP_215193.1	3.138317757
41121	F09	538	Rv0637	(3R)-hydroxyacyl-ACP dehydratase subunit HadC	NP_215151.1	2
41130	F10	538	Rv3637	transposase	NP_218154.1	1.879182156
41131	F11	538	Rv3733c	hypothetical protein	NP_218250.1	2
41123	F12	538	Rv0919	hypothetical protein	NP_215434.1	2.412639405
41124	G01	538	Rv1139c	hypothetical protein	NP_215655.1	2
9980	G02	538	Rv0504c	hypothetical protein	NP_215018.1	5.408921933
41141	G03	541	Rv2468c	hypothetical protein	NP_216984.1	3.284658041
41137	G04	541	Rv0864	molybdenum cofactor biosynthesis protein C	NP_215379.1	2
41134	G05	541	Rv0138	hypothetical protein	NP_214652.1	2
41138	G06	541	Rv2253	hypothetical protein	NP_216769.1	4.38077634
9968	G07	541	Rv1507A	hypothetical protein	NP_216023.1	4.184842884
41145	G08	544	Rv0744c	transcriptional regulatory protein	NP_215258.1	3.439338235
41149	G09	544	Rv3002c	acetolactate synthase 3 regulatory subunit	NP_217518.1	2
41148	G10	544	Rv2376c	low molecular weight antigen CFP2 (low molecular weight protein antigen 2) (CFP-2)	NP_216892.1	2
41150	G11	544	Rv3422c	hypothetical protein	NP_217939.1	2
41158	G12	547	Rv3749c	hypothetical protein	NP_218266.1	3.462522852
41156	H01	547	Rv3231c	hypothetical protein	NP_217748.1	2
41153	H02	547	Rv0185	hypothetical protein	NP_214699.1	2
41154	H03	547	Rv0268c	hypothetical protein	NP_214782.1	2
41155	H04	547	Rv1571	hypothetical protein	NP_216087.1	2
41165	H05	550	Rv2554c	Holliday junction resolvase-like protein	NP_217070.1	2
41165	H05	550	Rv2554c	Holliday junction resolvase-like protein	NP_217070.1	2
41164	H06	550	Rv1955	hypothetical protein	NP_216471.1	4.296363636
41161	H07	550	Rv1577c	phiRv1 phage protein	NP_216093.1	2
41166	H08	550	Rv3111	molybdenum cofactor biosynthesis protein C	YP_177927.1	2
41162	H09	550	Rv1657	arginine repressor	NP_216173.1	2
41173	H10	553	Rv1413	hypothetical protein	NP_215929.1	2
41168	H11	553	Rv0369c	membrane oxidoreductase	NP_214883.1	2
41179	H12	553	Rv2779c	transcriptional regulatory protein	NP_217295.2	2

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