

# **Product Information Sheet for NR-19676**

# Mycobacterium tuberculosis Gateway<sup>®</sup> Clone Set, Recombinant in *Escherichia* coli, Plate 40

# Catalog No. NR-19676

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<sup>®</sup> 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<sup>®</sup> Clones can be obtained from Invitrogen<sup>™</sup>. 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<sup>™</sup> Gateway<sup>®</sup> Technology Manual for additional details.

Plate orientation and viability were confirmed for NR-19676.

### **Material Provided:**

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

## Packaging/Storage:

NR-19676 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:

- Scrape top of frozen well with a pipette tip and streak onto
  again 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 40, NR-19676."

#### **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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performed under a U.S. Government contract, individuals contemplating commercial use of the material, its products or 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.

#### References:

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

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Table 1: Mycobacterium tuberculosis Gateway® Clones, Plate 40 (ZMTMD)1

Clone	Well Position	ORF Length	Locus ID	Description	Accession Number	Average Depth of Coverage
11825	A01	133	MT3223	hypothetical protein MT3223	NP 337749.1	-
11965	A02	133	MT2326	hypothetical protein MT2326	NP 336794.1	-
11925	A03	136	MT3156	hypothetical protein MT3156	NP 337678.1	-
11991	A05	142	MT0603	hypothetical protein MT0603	NP 335012.1	-
11916	A06	145	MT3536	hypothetical protein MT3536	NP 338062.1	2
11821	A07	145	MT0506	hypothetical protein MT0506	NP 334915.1	-
11951	A08	145	MT3174.1	hypothetical protein MT3174.1	NP 337697.1	-
11843	A10	145	MT0294	hypothetical protein MT0294	NP 334704.1	-
11873	A11	145	MT3436	hypothetical protein MT3436	NP 337965.1	-
11909	A12	148	MT2424	hypothetical protein MT2424	NP 336904.1	-
11927	B01	148	MT3847	hypothetical protein MT3847	NP 338397.1	-
11969	B02	151	MT0416	hypothetical protein MT0416	NP 334826.1	-
11869	B03	151	MT2417	hypothetical protein MT2417	NP 336896.1	-
11826	B04	154	MT0540	hypothetical protein MT0540	NP 334949.1	2
11819	B05	154	MT2375	hypothetical protein MT2375	NP 336854.1	-
11816	B06	154	MT2895	hypothetical protein MT2895	NP 337406.1	2
11853	B07	154	MT2083	hypothetical protein MT2083	NP 336548.1	-
12003	B08	154	MT3846	hypothetical protein MT3846	NP 338396.1	-
11905	B09	157	MT1771.1	hypothetical protein MT1771.1	NP 336230.1	-
11976	B10	157	MT0868	hypothetical protein MT0868	NP 335297.1	1.955414013
11985	B11	160	MT2092	hypothetical protein MT2092	NP 336557.1	-
11814	B12	160	MT2115	hypothetical protein MT2115	NP 336580.1	2
11829	C01	160	MT3290.2	hypothetical protein MT3290.2	NP 337819.1	-
11899	C02	160	MT3767.3	hypothetical protein MT3767.3	NP 338320.1	-
11903	C03	160	MT3580.2	hypothetical protein MT3580.2	NP 338125.1	-
11839	C04	163	MT0116.1	hypothetical protein MT0116.1	NP 334525.1	-
11955	C05	163	MT2369	hypothetical protein MT2369	NP 336845.1	-
11913	C06	166	MT3628	hypothetical protein MT3628	NP 338175.1	-
11963	C07	166	MT2168	hypothetical protein MT2168	NP_336637.1	-
11837	C08	166	MT3994	hypothetical protein MT3994	NP 338548.1	-
11961	C09	166	MT3491.1	hypothetical protein MT3491.1	NP 338013.1	-
11941	C10	166	MT2510	hypothetical protein MT2510	NP 336993.1	-
11895	C11	169	MT2325	hypothetical protein MT2325	NP 336793.1	-
11915	C12	169	MT0740.1	hypothetical protein MT0740.1	NP 335158.1	-
11901	D01	169	MT3876.1	hypothetical protein MT3876.1	NP 338427.1	-
12001	D02	169	MT1578.1	hypothetical protein MT1578.1	NP_336031.1	-
11953	D03	172	MT3362	hypothetical protein MT3362	NP 337889.1	-
11882	D04	172	MT0573.1	hypothetical protein MT0573.1	NP_334982.1	1.947674419
11823	D05	175	MT0773.1	hypothetical protein MT0773.1	NP 335200.1	-
11849	D06	175	MT1070	hypothetical protein MT1070	NP_335507.1	-
11939	D07	175	MT0492	hypothetical protein MT0492	NP_334901.1	-
11855	D08	178	MT3972.1	hypothetical protein MT3972.1	NP 338526.1	-

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11920   D99   178   MT0991   hypothetical protein MT0991   NP 335425.1   2	Clone	Well Position	ORF Length	Locus ID	Description	Accession Number	Average Depth of Coverage
11929	11920	D09	178	MT0991	hypothetical protein MT0991	NP 335425.1	2
11889	11993	D10	178	MT1098	hypothetical protein MT1098	NP 335540.1	-
11889	11929	D11	178	MT1556.1		NP 336009.1	2
11831   E01   181   MT0031   hypothetical protein MT0031   NP 334440.1   -		D12	181			NP 337472.1	-
11983   E02	11831	E01	181	MT0031		NP 334440.1	-
11865   E03		E02					-
11897   E04   184   MT3919   hypothetical protein MT3919   NP 338471.1   2   11871   E05   184   MT0946   hypothetical protein MT0910.4   NP 335379.1     11919   E06   184   MT0910.4   hypothetical protein MT0910.4   NP 335342.1       11919   E06   184   MT0910.3   hypothetical protein MT0910.3   NP 335342.1       11880   E08   187   MT0910.3   hypothetical protein MT1912.1   NP 33566.1   1.679144385.   11944   E09   187   MT2138.1   hypothetical protein MT112.1   NP 33566.1   1.679144385.   11946   E10   187   MT2138.1   hypothetical protein MT3953   NP 335605.1   2.85026738   11986   E10   187   MT3553   hypothetical protein MT3953   NP 335606.1   1.743315508   11883   E11   187   MT1356   hypothetical protein MT3963   NP 335606.1   1.743315508   11846   E12   190   MT1813   hypothetical protein MT1813   NP 336270.1   1.994736842   11877   F01   190   MT1077   hypothetical protein MT1077   NP 335515.1   -     12079   F02   190   MT0431   hypothetical protein MT0431   NP 334941.1   2   12058   F03   190   MT2584   hypothetical protein MT2564   NP 337042.1   2   12026   F04   190   MT288   hypothetical protein MT2564   NP 33792.1   2   2   12117   F05   193   MT1178   hypothetical protein MT0876   NP 335953.1   2   12067   F07   193   MT0970   hypothetical protein MT0910.1   NP 335339.1   -   12067   F07   193   MT1178   hypothetical protein MT0910.1   NP 335339.1   -   12067   F08   199   MT0940   hypothetical protein MT0910.1   NP 335339.1   -   12067   F08   199   MT1980   hypothetical protein MT0910.1   NP 335339.1   -   12067   F08   199   MT1980   hypothetical protein MT0910.1   NP 335339.1   -   12081   NP 335339.1   -     12081   NP 335339.1   -     12081   NP 335339.1   -     12081   NP 335339.1   -     12081   NP 335339.1   -     12081   NP 335339.1   -     12081   NP 335339.1   -     12081   NP 33539.1   -     12081   NP 33539.	11865	E03	184	MT1321			-
11871   E05   184   MT0946   hypothetical protein MT0910 4   P. 335379.1   - 111919   E06   184   MT0910.4   hypothetical protein MT0910.3   NP 335342.1   - 111959   E07   187   MT0910.3   hypothetical protein MT0910.3   NP 335341.1   - 111800   E08   187   MT1212.1   hypothetical protein MT0910.3   NP 335366.1   1.67914/385.   11984   E09   187   MT2138.1   hypothetical protein MT2138.1   NP 335656.1   2.85026738   11986   E10   187   MT3533   hypothetical protein MT2138.1   NP 336805.1   2.85026738   11986   E10   187   MT3565   hypothetical protein MT3556   NP 338804.1   - 11947464   E12   190   MT1077   hypothetical protein MT1077   hypothetical protein MT1077   NP 335555.1   - 12079   F02   190   MT1077   hypothetical protein MT1077   NP 335555.1   - 12079   F02   190   MT0731   hypothetical protein MT0431   NP 334841.1   2   12058   F03   190   MT2564   hypothetical protein MT0431   NP 335732.1   2   12026   F04   190   MT1078   hypothetical protein MT1288   NP 335732.1   2   12026   F06   193   MT0576   hypothetical protein MT1088   NP 335732.1   2   12026   F06   193   MT0767   hypothetical protein MT1088   NP 33593.1   2   12026   F07   193   MT0107   hypothetical protein MT1178   NP 33553.1   2   12032   F06   193   MT0107   hypothetical protein MT1178   NP 335623.1   2   12034   F08   196   MT1497.2   hypothetical protein MT1970.1   NP 33539.1   2   12034   F08   196   MT1497.2   hypothetical protein MT1970.1   NP 33539.1   2   12034   F08   196   MT1497.2   hypothetical protein MT1970.1   NP 33539.1   2   12129   F11   199   MT006   hypothetical protein MT13780   NP 334962.1   - 12129   F11   199   MT006   hypothetical protein MT3780   NP 334962.1   - 12129   MT006   hypothetical protein MT3780   NP 334962.1   - 12129   MT006   hypothetical protein MT3780   NP 336948.1   - 12129   MT006   hypothetical protein MT3870   NP 336948.1   - 12129   MT006   MT370.2   hypothetical protein MT2467   NP 336948.1   - 12129   MT006   MT370.2   hypothetical protein MT3870.1   NP 336948.1   - 12121   MT006   MT37			184	MT3919			2
11919   E06		E05	184	MT0946			
11959   E07		E06	184			NP 335342.1	-
11880   E08						NP 335341.1	-
11944   E09							1.679144385
11986   E10							
11863							
11846   E12							-
11877   F01   190   MT1077   hypothetical protein MT1077   NP 335515.1   - 12079   F02   190   MT0431   hypothetical protein MT0431   NP 33484.1   2   12058   F03   190   MT2554   hypothetical protein MT2554   NP 337042.1   2   12026   F04   190   MT1288   hypothetical protein MT2554   NP 335732.1   2   12117   F05   193   MT0576   hypothetical protein MT07676   NP 334985.1   2   12217   F05   193   MT0576   hypothetical protein MT07676   NP 334985.1   2   12032   F06   193   MT1178   hypothetical protein MT01178   NP 335623.1   2   12067   F07   193   MT0190   hypothetical protein MT01178   NP 335623.1   2   12094   F08   196   MT1497.2   hypothetical protein MT0190.1   NP 33539.1   - 12094   F08   196   MT1497.2   hypothetical protein MT0190.1   NP 33539.1   - 12094   F08   199   MT0196   hypothetical protein MT1497.2   NP 335947.1   1.964285714   12185   F09   199   MT0196   hypothetical protein MT3780   NP 334602.1   - 12187   F10   199   MT3780   hypothetical protein MT3780   NP 3384602.1   - 12187   F11   199   MT3780   hypothetical protein MT3780   NP 338479.1   - 12187   F12   199   MT3275.1   hypothetical protein MT3275.1   NP 337802.1   2   12031   G01   199   MT0553   hypothetical protein MT0069   NP 334479.1   - 12072   G03   202   MT2467   hypothetical protein MT2467   NP 336948.1   - 12072   G03   202   MT2467   hypothetical protein MT1286.1   NP 336948.1   2   12015   G04   202   MT2370.2   hypothetical protein MT370.2   NP 336948.1   - 12155   G06   205   MT0600   hypothetical protein MT1370.2   NP 336948.1   - 12155   G06   205   MT0600   hypothetical protein MT1370.2   NP 336948.1   - 12052   G08   205   MT0603   hypothetical protein MT3270.1   NP 336948.1   - 12052   G08   205   MT0603   hypothetical protein MT0600   NP 33509.1   2   12052   G08   205   MT0603   hypothetical protein MT0803   NP 33694.1   - 12155   G11   208   MT0803   hypothetical protein MT0803   NP 33694.1   - 12155   G11   208   MT0803   hypothetical protein MT0803   NP 33694.1   - 12163   H02   201   MT363.1   hypotheti							1.994736842
12079   F02   190   MT0431   hypothetical protein MT0431   NP 34841.1   2   12058   F03   190   MT2554   hypothetical protein MT2554   NP 337042.1   2   12026   F04   190   MT1288   hypothetical protein MT1288   NP 336732.1   2   12117   F05   193   MT0576   hypothetical protein MT10576   NP 334985.1   2   12032   F06   193   MT1178   hypothetical protein MT1078   NP 335623.1   2   12067   F07   193   MT0910.1   hypothetical protein MT0910.1   NP 335339.1   - 12094   F08   196   MT1497.2   hypothetical protein MT0910.1   NP 335947.1   1.964285714   12185   F09   199   MT0196   hypothetical protein MT0970.1   NP 336947.1   1.964285714   12185   F09   199   MT3780   hypothetical protein MT3780   NP 338402.1   - 12129   F11   199   MT3780   hypothetical protein MT3069   NP 334479.1   - 12187   F12   199   MT3275.1   hypothetical protein MT0699   NP 334479.1   - 12187   F12   199   MT3275.1   hypothetical protein MT0563   NP 337802.1   2   12011   G02   202   MT2467   hypothetical protein MT0563   NP 337802.1   2   12011   G02   202   MT2467   hypothetical protein MT0567   NP 336948.1   2   12012   G03   202   MT146.1   hypothetical protein MT146.1   NP 336036.1   2   12155   G04   202   MT2370.2   hypothetical protein MT1370.1   NP 336038.1   2   12155   G06   205   MT0600   hypothetical protein MT085.1   NP 336038.1   2   12155   G06   205   MT0600   hypothetical protein MT0800   NP 33509.1   2   12052   G08   205   MT0603   hypothetical protein MT0800   NP 336038.1   2   12056   G07   205   MT2370   hypothetical protein MT0801   NP 336038.1   2   12056   G09   208   MT0853   hypothetical protein MT0800   NP 33509.1   2   12056   G09   208   MT0853   hypothetical protein MT0800   NP 336036.1   2   12056   G09   208   MT0853   hypothetical protein MT0800   NP 33509.1   2   12056   G09   208   MT0853   hypothetical protein MT0800   NP 33608.1   2   12056   G09   208   MT0853   hypothetical protein MT0800   NP 33609.1   2   12056   H04   211   MT0638.1   hypothetical protein MT0800   NP 33561.1   - 12121   H04   2							
12058   F03   190   MT2554   hypothetical protein MT2554   NP 337042.1   2							2
12026   F04   190   MT1288   hypothetical protein MT1288   NP 335732.1   2   12117   F05   193   MT0576   hypothetical protein MT0576   NP 334985.1   2   12032   F06   193   MT1178   hypothetical protein MT0576   NP 335623.1   2   12067   F07   193   MT0910.1   hypothetical protein MT0910.1   NP 335623.1   2   12067   F07   193   MT0910.1   hypothetical protein MT0910.1   NP 335393.1   - 12094   F08   196   MT1497.2   hypothetical protein MT0910.1   NP 335393.1   - 12094   F08   196   MT1497.2   hypothetical protein MT0919.1   NP 335947.1   1.964285714   12185   F09   199   MT0196   hypothetical protein MT0196   NP 334602.1   - 12129   F11   199   MT0089   hypothetical protein MT3780   NP 33833.1   2   12129   F11   199   MT0089   hypothetical protein MT3780   NP 338479.1   - 12187   F12   199   MT3275.1   hypothetical protein MT3275.1   NP 337802.1   2   12031   G01   199   MT0553   hypothetical protein MT0553   NP 334962.1   - 12011   G02   202   MT2467   hypothetical protein MT0553   NP 334962.1   - 12015   G03   202   MT2467   hypothetical protein MT12467   NP 336948.1   2   12015   G04   202   MT2370.2   hypothetical protein MT146.1   NP 336202.1   2   12199   G05   205   MT1685.1   hypothetical protein MT1740.1   NP 336948.1   - 12199   G05   205   MT1685.1   hypothetical protein MT0600   NP 33509.1   2   12056   G07   205   MT2370   hypothetical protein MT0800   NP 33509.1   2   12056   G07   205   MT2370   hypothetical protein MT0800   NP 33509.1   2   12056   G07   205   MT2370   hypothetical protein MT0803   NP 335280.1   2   12077   G10   208   MT3671.2   hypothetical protein MT0853   NP 335280.1   2   12077   G10   208   MT3671.2   hypothetical protein MT0853   NP 335280.1   2   12077   G10   208   MT3671.2   hypothetical protein MT0800   NP 33694.1   - 12115   G11   208   MT3014   hypothetical protein MT0803   NP 33527.1   - 1216   G12   G12   G12   G12   G14							
12117   F05							
12032   F06							
12067   F07   193   MT0910.1   Nppothetical protein MT0910.1   NP 335339.1   - 12094   F08   196   MT1497.2   hypothetical protein MT197.2   NP 335947.1   1.964285714   1.964285714   1.9184285714   1.9185   F09   199   MT0196   hypothetical protein MT0196   NP 334602.1   - 12167   F10   199   MT3780   hypothetical protein MT3780   NP 3348333.1   2   1.2129   F11   199   MT0069   hypothetical protein MT0069   NP 334479.1   - 12187   F12   199   MT0069   hypothetical protein MT0069   NP 334479.1   - 12187   F12   199   MT0553   hypothetical protein MT0375.1   NP 337802.1   2   12031   G01   199   MT0553   hypothetical protein MT0553   NP 334962.1   - 12011   G02   202   MT2467   hypothetical protein MT0467   NP 336948.1   2   12072   G03   202   MT746.1   hypothetical protein MT1746.1   NP 336202.1   2   12015   G04   202   MT2370.2   hypothetical protein MT1780.1   NP 336202.1   2   1219   G05   205   MT1585.1   hypothetical protein MT2370.2   NP 336848.1   - 12195   G06   205   MT0600   hypothetical protein MT1660   NP 335009.1   2   12052   G08   205   MT2370   hypothetical protein MT0600   NP 335009.1   2   12052   G08   205   MT2370   hypothetical protein MT370   NP 336946.1   2   12170   G09   208   MT0633   hypothetical protein MT3970   NP 335280.1   2   12170   G09   208   MT0633   hypothetical protein MT3673   NP 335280.1   2   12170   G09   208   MT3671.2   hypothetical protein MT3870   NP 335280.1   2   12170   G10   208   MT3671.2   hypothetical protein MT396   NP 335280.1   2   12171   G11   208   MT2396   hypothetical protein MT390   NP 33694.1   - 12180   H01   208   MT3014   hypothetical protein MT390   NP 33694.1   - 12180   H03   211   MT0290   hypothetical protein MT3014   NP 337527.1   - 12180   H03   211   MT0290   hypothetical protein MT3010   NP 33690.1   2   12180   H03   211   MT0290   hypothetical protein MT3010   NP 33690.1   2   12180   H03   211   MT0290   hypothetical protein MT3010   NP 33690.1   - 12180   H03   220   MT3149.1   hypothetical protein MT3056.2   NP 33690.1   - 12180							
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12072   G03   202   MT1746.1   hypothetical protein MT1746.1   NP 336202.1   2							
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12183         H07         217         MT3959         hypothetical protein MT3959         NP 338512.1         -           12176         H08         217         MT3268         hypothetical protein MT3268         NP 337793.1         2           12149         H09         220         MT3149.1         hypothetical protein MT3149.1         NP 337669.1         -           12061         H10         220         MT2365.2         hypothetical protein MT2365.2         NP 336840.1         -           12045         H11         220         MT1121         hypothetical protein MT1121         NP 335564.1         2							1
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<sup>&</sup>lt;sup>1</sup>All information in this table was provided by the J. Craig Venter Institute at the time of deposition.

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