# *Mycobacterium tuberculosis* Gateway® Clone Set, Recombinant in *Escherichia coli*, Plate 14

## Catalog No. NR-19650

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 *att*B substrate (*att*B-PCR product or a linearized *att*B expression clone) with an *att*P substrate (pDONR™221) to create an *att*L-containing entry clone. The entry clone contains recombinational cloning sites, *att*L1 and *att*L2 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-19650.

### 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-19650 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 14, NR-19650."

### 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. 6th ed. Washington, DC: U.S. Government Printing Office, 2020; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

### Disclaimers:

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at www.beiresources.org.

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### Use Restrictions:

**This material is distributed for internal research, non-**

## 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 14 (ZMTLD)[1]**

| Clone | Well Position | ORF Length | Locus ID | Description | Accession Number | Average Depth of Coverage |
|---|---|---|---|---|---|---|
| 40472 | A01 | 385 | Rv3188 | hypothetical protein Rv3188 | NP_217704.1 | 2 |
| 40468 | A02 | 385 | Rv1670 | hypothetical protein Rv1670 | NP_216186.1 | 2.2 |
| 40464 | A04 | 385 | Rv0961 | integral membrane protein | NP_215476.1 | 2 |
| 40470 | A05 | 385 | Rv2244 | acyl carrier protein | NP_216760.1 | 2 |
| 40471 | A06 | 385 | Rv2588c | preprotein translocase subunit YajC | NP_217104.1 | 2 |
| 40477 | A07 | 388 | Rv0520 | hypothetical protein Rv0520 | NP_215034.1 | 2 |
| 40480 | A08 | 388 | Rv3862c | transcriptional regulatory protein WHIB-like WHIB6 | NP_218379.1 | 2 |
| 40478 | A09 | 388 | Rv1717 | hypothetical protein Rv1717 | NP_216233.1 | 2 |
| 40479 | A10 | 388 | Rv1948c | hypothetical protein Rv1948c | NP_216464.1 | 2 |
| 40476 | A11 | 388 | Rv0454 | hypothetical protein Rv0454 | NP_214968.1 | 2 |
| 40481 | A12 | 388 | Rv3914 | thioredoxin trxC (TRX) (MPT46) | NP_218431.1 | 3.208762887 |
| 40488 | B01 | 391 | Rv2767c | hypothetical protein Rv2767c | NP_217283.1 | 2 |
| 40483 | B02 | 391 | Rv1440 | preprotein translocase subunit SecG | NP_215956.2 | 2 |
| 40498 | B03 | 394 | Rv3073c | hypothetical protein Rv3073c | NP_217589.1 | 2 |
| 40491 | B04 | 394 | Rv1810 | hypothetical protein Rv1810 | NP_216326.1 | 2 |
| 40497 | B05 | 394 | Rv2801c | hypothetical protein Rv2801c | NP_217317.1 | 2 |
| 40495 | B06 | 394 | Rv2204c | hypothetical protein Rv2204c | NP_216720.1 | 2.583756345 |
| 40494 | B07 | 394 | Rv2144c | transmembrane protein | NP_216660.1 | 2 |
| 40492 | B08 | 394 | Rv1889c | hypothetical protein Rv1889c | NP_216405.1 | 2 |
| 40493 | B09 | 394 | Rv1994c | transcriptional regulatory protein | NP_216510.1 | 2 |
| 40504 | B10 | 397 | Rv2640c | ArsR family transcriptional regulator | NP_217156.1 | 1.914357683 |
| 40499 | B11 | 397 | Rv0967 | hypothetical protein Rv0967 | NP_215482.1 | 2 |
| 40505 | B12 | 397 | Rv3178 | hypothetical protein Rv3178 | NP_217694.1 | 2.586901763 |
| 40510 | C01 | 397 | Rv3845 | hypothetical protein Rv3845 | NP_218362.1 | 2.652392947 |
| 40506 | C02 | 397 | Rv3748 | hypothetical protein Rv3748 | NP_218265.1 | 2 |
| 40518 | C03 | 400 | Rv1342c | hypothetical protein Rv1342c | YP_177800.1 | 2.1175 |
| 40520 | C05 | 400 | Rv2628 | hypothetical protein Rv2628 | NP_217144.1 | 2 |
| 40528 | C07 | 400 | Rv3744 | transcriptional regulatory protein ArsR-family | NP_218261.1 | 3.19 |
| 40519 | C08 | 400 | Rv1669 | hypothetical protein Rv1669 | NP_216185.1 | 2 |
| 40516 | C09 | 400 | Rv1171 | hypothetical protein Rv1171 | NP_215687.2 | 2.595 |
| 10034 | C11 | 400 | Rv1508A | hypothetical protein Rv1508c | NP_216024.1 | 3.01 |
| 40534 | C12 | 403 | Rv1824 | hypothetical protein Rv1824 | NP_216340.1 | 2 |
| 40537 | D01 | 403 | Rv3789 | integral membrane protein | NP_218306.1 | 2 |
| 40531 | D02 | 403 | Rv1152 | transcriptional regulatory protein | NP_215668.1 | 3.29528536 |
| 40552 | D03 | 406 | Rv2063c | | | 2.581280788 |
| 40539 | D04 | 406 | Rv0123 | hypothetical protein Rv0123 | NP_214637.1 | 2 |
| 40555 | D05 | 406 | Rv2647 | hypothetical protein Rv2647 | NP_217163.1 | 2 |
| 40540 | D06 | 406 | Rv0397 | 13E12 repeat family protein | NP_214911.1 | 2 |
| 40550 | D07 | 406 | Rv1209 | hypothetical protein Rv1209 | NP_215725.1 | 2.586206897 |
| 40556 | D08 | 406 | Rv2694c | hypothetical protein Rv2694c | NP_217210.1 | 2 |
| 40557 | D09 | 406 | Rv3360 | hypothetical protein Rv3360 | NP_217877.1 | 2 |
| 40558 | D10 | 406 | Rv3363c | hypothetical protein Rv3363c | NP_217880.1 | 2 |

| Clone | Well Position | ORF Length | Locus ID | Description | Accession Number | Average Depth of Coverage |
|---|---|---|---|---|---|---|
| 40541 | D11 | 406 | Rv0521c | hypothetical protein Rv0521 | YP_177626.1 | 2 |
| 40538 | D12 | 406 | Rv0122 | hypothetical protein Rv0122 | NP_214636.1 | 2 |
| 40554 | E01 | 406 | Rv2272 | transmembrane protein | NP_216788.1 | 3.221674877 |
| 40547 | E02 | 406 | Rv0720 | 50S ribosomal protein L18 | NP_215234.1 | 2.669950739 |
| 40548 | E03 | 406 | Rv1137c | hypothetical protein Rv1137c | NP_215653.1 | 2 |
| 40559 | E04 | 406 | Rv3687c | anti-anti-sigma factor RSFB (anti-sigma factor antagonist) (regulator of sigma F B) | NP_218204.1 | 2 |
| 40564 | E05 | 409 | Rv1471 | thioredoxin TRXB1 | YP_177815.1 | 3.273838631 |
| 40562 | E06 | 409 | Rv1352 | hypothetical protein Rv1352 | NP_215868.1 | 2 |
| 40566 | E07 | 409 | Rv2446c | integral membrane protein | NP_216962.1 | 2.836185819 |
| 40568 | E08 | 409 | Rv3352c | oxidoreductase | NP_217869.1 | 2.589242054 |
| 40575 | E09 | 412 | Rv1470 | thioredoxin TRXA | NP_215986.1 | 2 |
| 40581 | E10 | 412 | Rv3460c | 30S ribosomal protein S13 | NP_217977.1 | 2 |
| 40579 | E11 | 412 | Rv2822c | hypothetical protein Rv2822c | NP_217338.1 | 2.650485437 |
| 40573 | E12 | 412 | Rv1114 | hypothetical protein Rv1114 | NP_215630.1 | 2 |
| 40574 | F01 | 412 | Rv1269c | hypothetical protein Rv1269c | NP_215785.1 | 2 |
| 40572 | F02 | 412 | Rv0682 | 30S ribosomal protein S12 | NP_215196.1 | 2 |
| 40569 | F03 | 412 | Rv0333 | hypothetical protein Rv0333 | NP_214847.1 | 2 |
| 40580 | F04 | 412 | Rv3046c | hypothetical protein Rv3046c | NP_217562.1 | 2 |
| 40586 | F05 | 415 | Rv1974 | hypothetical protein Rv1974 | NP_216490.1 | 2 |
| 40590 | F06 | 415 | Rv3289c | transmembrane protein | NP_217806.1 | 2 |
| 40595 | F07 | 415 | Rv3675 | hypothetical protein Rv3675 | NP_218192.1 | 2 |
| 40584 | F08 | 415 | Rv1555 | fumarate reductase subunit D | NP_216071.1 | 2.178313253 |
| 40589 | F09 | 415 | Rv2548 | hypothetical protein Rv2548 | NP_217064.1 | 1.985542169 |
| 40596 | F10 | 415 | Rv3923c | ribonuclease P | NP_218440.2 | 2.937349398 |
| 40585 | F11 | 415 | Rv1943c | hypothetical protein Rv1943c | NP_216459.1 | 2 |
| 40604 | F12 | 418 | Rv2420c | hypothetical protein Rv2420c | NP_216936.1 | 2 |
| 40606 | G02 | 418 | Rv3070 | camphor resistance protein CrcB | NP_217586.1 | - |
| 40605 | G03 | 418 | Rv2642 | ArsR family transcriptional regulator | NP_217158.1 | 2.980861244 |
| 40599 | G04 | 418 | Rv0353 | probable heat shock protein transcriptional repressor HspR | NP_214867.1 | 2 |
| 40598 | G05 | 418 | Rv0140 | hypothetical protein Rv0140 | NP_214654.1 | 2.655502392 |
| 40600 | G06 | 418 | Rv1343c | lipoprotein LprD | NP_215859.1 | 2 |
| 40603 | G07 | 418 | Rv1924c | hypothetical protein Rv1924c | NP_216440.1 | 2 |
| 40612 | G09 | 421 | Rv0960 | hypothetical protein Rv0960 | NP_215475.1 | 3.163895487 |
| 40610 | G10 | 421 | Rv0656c | hypothetical protein Rv0656c | NP_215170.1 | 2 |
| 40618 | G11 | 421 | Rv3747 | hypothetical protein Rv3747 | NP_218264.1 | 1.895486936 |
| 40609 | G12 | 421 | Rv0611c | hypothetical protein Rv0611c | NP_215125.1 | 2.190023753 |
| 40614 | H01 | 421 | Rv1690 | lipoprotein LprJ | NP_216206.1 | 2.593824228 |
| 40619 | H02 | 424 | Rv0313 | hypothetical protein Rv0313 | NP_214827.1 | 2 |
| 40623 | H03 | 424 | Rv1365c | anti-anti-sigma factor RSFA (anti-sigma factor antagonist) (regulator of sigma F A) | NP_215881.1 | 2.570754717 |
| 40628 | H04 | 424 | Rv3145 | NADH dehydrogenase subunit A | NP_217661.1 | 2.655660377 |
| 40624 | H06 | 424 | Rv2331 | hypothetical protein Rv2331 | NP_216847.1 | 2 |
| 40622 | H07 | 424 | Rv0607 | hypothetical protein Rv0607 | NP_215121.1 | 2 |
| 40625 | H08 | 424 | Rv2470 | globin GlbO | NP_216986.1 | 2 |
| 40635 | H11 | 427 | Rv0807 | hypothetical protein Rv0807 | NP_215322.1 | 1.592505855 |
| 40653 | H12 | 427 | Rv2961 | transposase | NP_217477.1 | 2 |

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