

## *Klebsiella pneumoniae* MRSN Diversity Panel

### Catalog No. NR-55604

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#### Contributor:

Multidrug-Resistant Organism Repository and Surveillance Network (MRSN), Bacterial Disease Branch, Walter Reed Army Institute of Research, Silver Spring, Maryland, USA

#### Manufacturer:

BEI Resources

#### Product Description:

NR-55604 consists of 100 individual isolates of the *Klebsiella pneumoniae* (*K. pneumoniae*) Multidrug-Resistant Organism Repository and Surveillance Network (MRSN) Diversity Panel. Detailed information for each isolate, including multi-locus sequence type (MLST) and antibiotic susceptibility profile, as provided by the depositor, is available on the individual Product Information Sheet and Certificate of Analysis.<sup>1,2</sup> Please refer to Table 1 for the catalog number, description and accession number of each isolate in the panel. The complete genome of each isolate in the panel has been sequenced (GenBank: [PRJNA717739](https://www.ncbi.nlm.nih.gov/nuclseq/PRJNA717739)).

*K. pneumoniae* is a Gram-negative enterobacterium that is a major cause of nosocomial infections of the urinary and respiratory tracts. Due to the extensive spread of antibiotic-resistant strains, especially of extended-spectrum  $\beta$ -lactamase (ESBL)-producing strains, there has been renewed interest in *Klebsiella* infections.<sup>2,3,4</sup>

#### Material Provided:

Each panel contains one vial of each *K. pneumoniae* MRSN isolate, for a total of 100 vials. Each vial contains approximately 0.5 mL of bacterial culture in Tryptic Soy broth supplemented with 10% glycerol.

**Note:** If homogeneity is required for your intended use, please purify prior to initiating work.

#### Packaging/Storage:

Each isolate was packaged aseptically in cryovials and assembled into one 100-section freezer box. The product is provided frozen and should be stored at  $-60^{\circ}\text{C}$  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:

Nutrient broth or Tryptic Soy broth or equivalent  
Nutrient agar or Tryptic Soy agar or Tryptic Soy agar with 5% defibrinated sheep blood or equivalent

#### Incubation:

Temperature:  $37^{\circ}\text{C}$   
Atmosphere: Aerobic  
Propagation:

1. Keep vial frozen until ready for use, then thaw.
2. Transfer the entire thawed aliquot into a single tube of broth.
3. Use several drops of the suspension to inoculate an agar slant and/or plate.
4. Incubate the tube, slant and/or plate at  $37^{\circ}\text{C}$  for 1 day.

#### Citation:

Acknowledgments for this panel and all associated strains therein should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Klebsiella pneumoniae* MRSN Diversity Panel, NR-55604, provided by the Multidrug-Resistant Organism Repository and Surveillance Network (MRSN) at the Walter Reed Army Institute of Research (WARIR), Silver Spring USA.

In addition, the contributors' paper should be acknowledged: "Martin, M. J., W. Stribling, A. C. Ong, R. Maybank, Y. I. Kwak, J. A. Rosado-Mendez, L. N. Preston, K. F. Lane, M. Julius, A. R. Jones, M. Hinkle, P. E. Waterman, E. P. Lesho, F. Lebreton, J. W. Bennett and P. T. Mc Gann. "A Panel of Diverse *Klebsiella pneumoniae* Clinical Isolates for Research and Development." *Microb. Genom.* 9 (2023). doi: 10.1099/mgen.0.000967. PubMed: 37141116."

#### Biosafety Level: 2

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.

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**References:**

1. McGann, P., Personal Communication.
2. Martin, M. J., W. Stribling, A. C. Ong, R. Maybank, Y. I. Kwak, J. A. Rosado-Mendez, L. N. Preston, K. F. Lane, M. Julius, A. R. Jones, M. Hinkle, P. E. Waterman, E. P. Lesho, F. Lebreton, J. W. Bennett and P. T. Mc Gann. "A Panel of Diverse *Klebsiella pneumoniae* Clinical Isolates for Research and Development." Microb. Genom. 9 (2023). PubMed: 37141116.
3. Lascols, C., et al. "Increasing Prevalence and Dissemination of NDM-1 Metallo- $\beta$ -Lactamase in India: Data from the SMART Study (2009)." J. Antimicrob. Chemother. 66 (2011): 1992-1997. PubMed: 21676902.
4. Ramirez, M. S., et al. "Multidrug-Resistant (MDR) *Klebsiella pneumoniae* Clinical Isolates: A Zone of High Heterogeneity (HHZ) as a Tool for Epidemiological Studies." Clin. Microbiol. Infect. 18 (2012): E254-E258. PubMed: 22551038.
5. Podschun, R. and U. Ullmann. "*Klebsiella* spp. as Nosocomial Pathogens: Epidemiology, Taxonomy, Typing Methods, and Pathogenicity Factors." Clin. Microbiol. Rev. 11 (1998): 589-603. PubMed: 9767057.

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Table 1: *Klebsiella pneumoniae* MRSN Diversity Panel Strains

| Catalog Number | Isolate                                    | Accession Number                |
|----------------|--|---------------------------------|
| NR-55504       | <i>Klebsiella pneumoniae</i> , MRSN 1912   | <a href="#">JAGYFC000000000</a> |
| NR-55505       | <i>Klebsiella pneumoniae</i> , MRSN 4111   | <a href="#">JAGYFB000000000</a> |
| NR-55506       | <i>Klebsiella pneumoniae</i> , MRSN 4759   | <a href="#">JAGYFA000000000</a> |
| NR-55507       | <i>Klebsiella pneumoniae</i> , MRSN 4815   | <a href="#">JAGYEZ000000000</a> |
| NR-55508       | <i>Klebsiella pneumoniae</i> , MRSN 5613   | <a href="#">JAGYEY000000000</a> |
| NR-55509       | <i>Klebsiella pneumoniae</i> , MRSN 5741   | <a href="#">JAGYEX000000000</a> |
| NR-55510       | <i>Klebsiella pneumoniae</i> , MRSN 5881   | <a href="#">JAGYEW000000000</a> |
| NR-55511       | <i>Klebsiella pneumoniae</i> , MRSN 6031   | <a href="#">JAGYEV000000000</a> |
| NR-55512       | <i>Klebsiella pneumoniae</i> , MRSN 6778   | <a href="#">JAGYEU000000000</a> |
| NR-55513       | <i>Klebsiella pneumoniae</i> , MRSN 7076   | <a href="#">JAGYET000000000</a> |
| NR-55514       | <i>Klebsiella pneumoniae</i> , MRSN 13726  | <a href="#">JAGYES000000000</a> |
| NR-55515       | <i>Klebsiella pneumoniae</i> , MRSN 13748  | <a href="#">JAGYER000000000</a> |
| NR-55516       | <i>Klebsiella pneumoniae</i> , MRSN 13761  | <a href="#">JAGYEQ000000000</a> |
| NR-55517       | <i>Klebsiella pneumoniae</i> , MRSN 13768  | <a href="#">JAGYEP000000000</a> |
| NR-55518       | <i>Klebsiella pneumoniae</i> , MRSN 14444  | <a href="#">JAGYEO000000000</a> |
| NR-55519       | <i>Klebsiella pneumoniae</i> , MRSN 15219  | <a href="#">JAGYEN000000000</a> |
| NR-55520       | <i>Klebsiella pneumoniae</i> , MRSN 15687  | <a href="#">JAGYEM000000000</a> |
| NR-55521       | <i>Klebsiella pneumoniae</i> , MRSN 15882  | <a href="#">JAGYEL000000000</a> |
| NR-55522       | <i>Klebsiella pneumoniae</i> , MRSN 15937  | <a href="#">JAGYEK000000000</a> |
| NR-55523       | <i>Klebsiella pneumoniae</i> , MRSN 16008  | <a href="#">JAGYEJ000000000</a> |
| NR-55524       | <i>Klebsiella pneumoniae</i> , MRSN 16233  | <a href="#">JAGYEI000000000</a> |
| NR-55525       | <i>Klebsiella pneumoniae</i> , MRSN 18411  | <a href="#">JAGYEH000000000</a> |
| NR-55526       | <i>Klebsiella pneumoniae</i> , MRSN 19073  | <a href="#">JAGYEG000000000</a> |
| NR-55527       | <i>Klebsiella pneumoniae</i> , MRSN 20522  | <a href="#">JAGYEF000000000</a> |
| NR-55528       | <i>Klebsiella pneumoniae</i> , MRSN 21304  | <a href="#">JAGYEE000000000</a> |
| NR-55529       | <i>Klebsiella pneumoniae</i> , MRSN 21352  | <a href="#">JAGYED000000000</a> |
| NR-55530       | <i>Klebsiella pneumoniae</i> , MRSN 22232  | <a href="#">JAGYEC000000000</a> |
| NR-55531       | <i>Klebsiella pneumoniae</i> , MRSN 22265  | <a href="#">JAGYEB000000000</a> |
| NR-55532       | <i>Klebsiella pneumoniae</i> , MRSN 25107  | <a href="#">JAGYEA000000000</a> |
| NR-55533       | <i>Klebsiella pneumoniae</i> , MRSN 25112  | <a href="#">JAGYDZ000000000</a> |
| NR-55534       | <i>Klebsiella pneumoniae</i> , MRSN 25616  | <a href="#">JAGYDY000000000</a> |
| NR-55535       | <i>Klebsiella pneumoniae</i> , MRSN 25947  | <a href="#">JAHLQW000000000</a> |
| NR-55536       | <i>Klebsiella pneumoniae</i> , MRSN 27106  | <a href="#">JAGYDX000000000</a> |
| NR-55537       | <i>Klebsiella pneumoniae</i> , MRSN 27778  | <a href="#">JAGYDW000000000</a> |
| NR-55538       | <i>Klebsiella pneumoniae</i> , MRSN 27989  | <a href="#">JAGYDV000000000</a> |
| NR-55539       | <i>Klebsiella pneumoniae</i> , MRSN 28183  | <a href="#">JAGYDU000000000</a> |
| NR-55540       | <i>Klebsiella pneumoniae</i> , MRSN 28866  | <a href="#">JAGYDT000000000</a> |
| NR-55541       | <i>Klebsiella pneumoniae</i> , MRSN 28880  | <a href="#">JAGYDS000000000</a> |
| NR-55542       | <i>Klebsiella pneumoniae</i> , MRSN 28887  | <a href="#">JAGYDR000000000</a> |
| NR-55543       | <i>Klebsiella pneumoniae</i> , MRSN 28893  | <a href="#">JAGYDQ000000000</a> |
| NR-55544       | <i>Klebsiella pneumoniae</i> , MRSN 365679 | <a href="#">JAGYDP000000000</a> |
| NR-55545       | <i>Klebsiella pneumoniae</i> , MRSN 366562 | <a href="#">JAGYDO000000000</a> |
| NR-55546       | <i>Klebsiella pneumoniae</i> , MRSN 368001 | <a href="#">JAGYDN000000000</a> |
| NR-55547       | <i>Klebsiella pneumoniae</i> , MRSN 368320 | <a href="#">JAGYDM000000000</a> |
| NR-55548       | <i>Klebsiella pneumoniae</i> , MRSN 371351 | <a href="#">JAGYDL000000000</a> |
| NR-55549       | <i>Klebsiella pneumoniae</i> , MRSN 374613 | <a href="#">JAGYDK000000000</a> |
| NR-55550       | <i>Klebsiella pneumoniae</i> , MRSN 375436 | <a href="#">JAGYDJ000000000</a> |
| NR-55551       | <i>Klebsiella pneumoniae</i> , MRSN 380979 | <a href="#">JAGYDI000000000</a> |
| NR-55552       | <i>Klebsiella pneumoniae</i> , MRSN 401050 | <a href="#">JAGYDH000000000</a> |
| NR-55553       | <i>Klebsiella pneumoniae</i> , MRSN 410359 | <a href="#">JAGYDG000000000</a> |
| NR-55554       | <i>Klebsiella pneumoniae</i> , MRSN 414780 | <a href="#">JAGYDF000000000</a> |

| Catalog Number | Isolate                                    | Accession Number                |
|----------------|--|---------------------------------|
| NR-55555       | <i>Klebsiella pneumoniae</i> , MRSN 430405 | <a href="#">JAGYDE000000000</a> |
| NR-55556       | <i>Klebsiella pneumoniae</i> , MRSN 430414 | <a href="#">JAGYDD000000000</a> |
| NR-55557       | <i>Klebsiella pneumoniae</i> , MRSN 450199 | <a href="#">JAGYDC000000000</a> |
| NR-55558       | <i>Klebsiella pneumoniae</i> , MRSN 468268 | <a href="#">JAGYDB000000000</a> |
| NR-55559       | <i>Klebsiella pneumoniae</i> , MRSN 479404 | <a href="#">JAGYDA000000000</a> |
| NR-55560       | <i>Klebsiella pneumoniae</i> , MRSN 499958 | <a href="#">JAGYDZ000000000</a> |
| NR-55561       | <i>Klebsiella pneumoniae</i> , MRSN 511348 | <a href="#">JAGYCY000000000</a> |
| NR-55562       | <i>Klebsiella pneumoniae</i> , MRSN 513382 | <a href="#">JAGYCX000000000</a> |
| NR-55563       | <i>Klebsiella pneumoniae</i> , MRSN 515247 | <a href="#">JAGYCW000000000</a> |
| NR-55564       | <i>Klebsiella pneumoniae</i> , MRSN 515432 | <a href="#">JAGYCV000000000</a> |
| NR-55565       | <i>Klebsiella pneumoniae</i> , MRSN 516635 | <a href="#">JAGYCU000000000</a> |
| NR-55566       | <i>Klebsiella pneumoniae</i> , MRSN 517281 | <a href="#">JAGYCT000000000</a> |
| NR-55567       | <i>Klebsiella pneumoniae</i> , MRSN 518712 | <a href="#">JAGYCS000000000</a> |
| NR-55568       | <i>Klebsiella pneumoniae</i> , MRSN 526410 | <a href="#">JAGYCR000000000</a> |
| NR-55569       | <i>Klebsiella pneumoniae</i> , MRSN 539414 | <a href="#">JAGYCQ000000000</a> |
| NR-55570       | <i>Klebsiella pneumoniae</i> , MRSN 546733 | <a href="#">JAGYCP000000000</a> |
| NR-55571       | <i>Klebsiella pneumoniae</i> , MRSN 560539 | <a href="#">JAGYCO000000000</a> |
| NR-55572       | <i>Klebsiella pneumoniae</i> , MRSN 562722 | <a href="#">JAGYCN000000000</a> |
| NR-55573       | <i>Klebsiella pneumoniae</i> , MRSN 564304 | <a href="#">JAGYCM000000000</a> |
| NR-55574       | <i>Klebsiella pneumoniae</i> , MRSN 572640 | <a href="#">JAGYCL000000000</a> |
| NR-55575       | <i>Klebsiella pneumoniae</i> , MRSN 581745 | <a href="#">JAGYCK000000000</a> |
| NR-55576       | <i>Klebsiella pneumoniae</i> , MRSN 582610 | <a href="#">JAGYCJ000000000</a> |
| NR-55577       | <i>Klebsiella pneumoniae</i> , MRSN 583114 | <a href="#">JAGYCI000000000</a> |
| NR-55578       | <i>Klebsiella pneumoniae</i> , MRSN 583141 | <a href="#">JAGYCH000000000</a> |
| NR-55579       | <i>Klebsiella pneumoniae</i> , MRSN 591344 | <a href="#">JAGYCG000000000</a> |
| NR-55580       | <i>Klebsiella pneumoniae</i> , MRSN 599975 | <a href="#">JAGYCF000000000</a> |
| NR-55581       | <i>Klebsiella pneumoniae</i> , MRSN 607210 | <a href="#">JAGYCE000000000</a> |
| NR-55582       | <i>Klebsiella pneumoniae</i> , MRSN 613682 | <a href="#">JAGYCD000000000</a> |
| NR-55583       | <i>Klebsiella pneumoniae</i> , MRSN 614201 | <a href="#">JAGYCC000000000</a> |
| NR-55584       | <i>Klebsiella pneumoniae</i> , MRSN 669448 | <a href="#">JAGYCB000000000</a> |
| NR-55585       | <i>Klebsiella pneumoniae</i> , MRSN 669510 | <a href="#">JAGYCA000000000</a> |
| NR-55586       | <i>Klebsiella pneumoniae</i> , MRSN 672476 | <a href="#">JAGYBZ000000000</a> |
| NR-55587       | <i>Klebsiella pneumoniae</i> , MRSN 676980 | <a href="#">JAGYBY000000000</a> |
| NR-55588       | <i>Klebsiella pneumoniae</i> , MRSN 680172 | <a href="#">JAGYBX000000000</a> |
| NR-55589       | <i>Klebsiella pneumoniae</i> , MRSN 681054 | <a href="#">JAGYBW000000000</a> |
| NR-55590       | <i>Klebsiella pneumoniae</i> , MRSN 699478 | <a href="#">JAGYBV000000000</a> |
| NR-55591       | <i>Klebsiella pneumoniae</i> , MRSN 699654 | <a href="#">JAGYBU000000000</a> |
| NR-55592       | <i>Klebsiella pneumoniae</i> , MRSN 702261 | <a href="#">JAGYBT000000000</a> |
| NR-55593       | <i>Klebsiella pneumoniae</i> , MRSN 702325 | <a href="#">JAGYBS000000000</a> |
| NR-55594       | <i>Klebsiella pneumoniae</i> , MRSN 728987 | <a href="#">JAGYBR000000000</a> |
| NR-55595       | <i>Klebsiella pneumoniae</i> , MRSN 730567 | <a href="#">JAGYBQ000000000</a> |
| NR-55596       | <i>Klebsiella pneumoniae</i> , MRSN 731029 | <a href="#">JAGYBP000000000</a> |
| NR-55597       | <i>Klebsiella pneumoniae</i> , MRSN 736213 | <a href="#">JAGYBO000000000</a> |
| NR-55598       | <i>Klebsiella pneumoniae</i> , MRSN 740795 | <a href="#">JAGYBN000000000</a> |
| NR-55599       | <i>Klebsiella pneumoniae</i> , MRSN 742743 | <a href="#">JAGYBM000000000</a> |
| NR-55600       | <i>Klebsiella pneumoniae</i> , MRSN 750877 | <a href="#">JAGYBL000000000</a> |
| NR-55601       | <i>Klebsiella pneumoniae</i> , MRSN 750999 | <a href="#">JAGYBK000000000</a> |
| NR-55602       | <i>Klebsiella pneumoniae</i> , MRSN 752729 | <a href="#">JAGYBJ000000000</a> |
| NR-55603       | <i>Klebsiella pneumoniae</i> , MRSN 761403 | <a href="#">JAGYBI000000000</a> |