Product Information Sheet for NR-55576

Klebsiella pneumoniae, Strain MRSN 582610

Catalog No. NR-55576

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For research use only. Not for use in humans.

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:

Bacteria Classification: *Enterobacteriaceae*, *Klebsiella*
Species: *Klebsiella pneumoniae*
Strain: MRSN 582610
Original Source: *Klebsiella pneumoniae (K. pneumoniae)*, strain MRSN 582610 was isolated in 2017 from a human respiratory sample in Asia as part of a global surveillance program.[1]
Comments: *K. pneumoniae*, strain MRSN 582610 was deposited as part of the MRSN *Klebsiella pneumoniae* Diversity Panel available from BEI Resources as NR-55604. NR-55576 was deposited as multi-locus sequence type (MLST) ST 268, K-locus type (KL) 20, O-locus type (OL) O2v1, VIR score 5, yersiniabactin gene allele *(ybt) ybt* 17; ICEKp10, genotoxic polyketide colibactin gene allele *(clb)*, aerobactin gene allele *(iuc)*, salmochelin gene allele *(iro)*, regulator of mucoviscosity allele (*rmp*A) and regulator of capsular polysaccharide allele (*rmp*A2). MRSN 582610 was deposited as a multidrug-resistant strain, sensitive to amikacin, ceftazidime/avibactam, ciprofloxacin, ertapenem, gentamicin, imipenem, levofloxacin, meropenem and tigecycline, intermediately resistant to ceftazidime, ceftolozane/tazobactam, piperacillin/tazobactam and tobramycin, and resistant to ampicillin/sulbactam, aztreonam, cefepime, ceftriaxone, tetracycline and trimethoprim/sulfamethoxazole. Strain MRSN 582610 is reported to have two aminoglycoside transferase genes [*aac*(6')-Ib-cr5 and *aad*A16; conferring resistance to various aminoglycosides], three beta-lactamase genes ($bla_{CTX-M-15}$, bla_{SHV-11} and bla_{TEM-1}; conferring resistance to beta-lactams), one fosfomycin resistance gene (*fos*A5; conferring resistance to fosfomycin), one macrolide phosphotransferase gene [*mph*(A); conferring resistance to macrolides], one rifampin ADP-ribosyltransferase gene (*arr*-3; conferring resistance to rifampin), one sulfonamide resistance gene (*sul*1; conferring resistance to sulfonamides), one tetracycline resistance gene [*tet*(A); conferring resistance to tetracycline] and one dihydrofolate reductase gene (*dfr*A27; conferring resistance to trimethoprim).[1] The complete genome of *K. pneumoniae*, strain MRSN 582610 has been sequenced (GenBank: JAGYCJ000000000).

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 β-lactamase (ESBL)-producing strains, there has been renewed interest in *Klebsiella* infections.[2,3,4]

Material Provided:

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:

NR-55576 was packaged aseptically in cryovials. The product is provided frozen and should be stored at -60°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°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°C for 1 day.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Klebsiella pneumoniae*, Strain MRSN 582610, NR-55576. This strain is part of the *Klebsiella pneumoniae* Diversity Panel provided by the Multidrug-Resistant Organism Repository and Surveillance Network (MRSN) at the Walter Reed Army Institute of Research (WRAIR)."

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

Disclaimers:

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References:

1. McGann, P., Personal Communication.
2. Lascols, C., et al. "Increasing Prevalence and Dissemination of NDM-1 Metallo-β-Lactamase in India: Data from the SMART Study (2009)." J. Antimicrob. Chemother. 66 (2011): 1992-1997. PubMed: 21676902.
3. 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.
4. 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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