Product Information Sheet for NR-56590

Klebsiella aerogenes, Strain 1049882

Catalog No. NR-56590

For research use only. Not for use in humans.

Contributor and Manufacturer:
ATCC®

Product Description:
Bacteria Classification: *Enterobacteriaceae*, *Klebsiella*
Species: *Klebsiella aerogenes* (previously referred to as *Enterobacter aerogenes)*[1]
Strain: 1049882
Original Source: *Klebsiella aerogenes (K. aerogenes)*, strain 1049882 was isolated in 2012 from a skin ulcer sample of a 23-year-old male in Mexico.
Comments: *K. aerogenes*, strain 1049882 was deposited as part of the Global Priority Superbugs Collection. NR-56590 was deposited as an antibiotic sensitive strain.

K. aerogenes is a Gram-negative, rod-shaped, facultatively-anaerobic opportunistic bacterium that is a commensal inhabitant of the human gastrointestinal tract. *K. aerogenes* is an emerging global public health concern as a CRE and multi-drug resistant nosocomial pathogen with significance in outbreaks occurring in industrialized nations, particularly Western Europe and the United States.[2,3,4,5,6,7] Carbapenem resistance is attributed to a natural expression of a chromosomal AmpC β-lactamase type cephalosporinase in addition to horizontal gene transfer of carbapenemase-encoding genes between *Enterobacteriaceae* isolates.[2,3,4] Resistance to other antibiotic classes, including β-lactams, aminoglycosides, fluoroquinolones and polymyxins, also occurs through the exchange of plasmids and transposons between *K. aerogenes* and other bacteria, such as *K. pneumoniae*, to adapt to changing environments.[2,5,6,7] The antibiotic-modifying enzymes gained through these processes are enabled by eight rRNA operons and 87 tRNA capable of translating foreign genes that use different codons.[2] Multi-drug resistant strains of *K. aerogenes* are associated with an altered expression of porins affecting membrane permeability.[4,5,6]

Material Provided:
Each vial contains approximately 0.3 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-56590 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 aerogenes*, Strain 1049882, NR-56590."

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). Current Edition. Washington, DC: U.S. Government Printing Office.

Disclaimers:
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References:

1. Tibndall, B. J., G. Sutton and G. M. Garrity. "*Enterobacter aerogenes* Hormaecha and Edwards 1960 (Approved Lists 1980) and *Klebsiella mobilis* Bascomb *et al.* 1971 (Approved Lists 1980) Share the Same Nomenclatural Type (ATCC 13048) on the Approved Lists and Homotypic synonyms, with Consequences for the Name *Klebsiella mobilis* Bascomb *et al.* 1971 (Approved Lists 1980)" Int. J. Syst. Evol. Microbiol. 67 (2017): 502-504. PubMed: 27902205.
2. Devin-Regli, A. and J. M. Pagès. "*Enterobacter aerogenes* and *Enterobacteriaceae*; Versatile Bacterial Pathogens Confronting Antibiotic Treatment." Front. Microbiol. 6 (2015): 392. PubMed: 26042091.
3. Sanders, W. E. and C. S. Sanders. "*Enterobacter* spp.: Pathogens Poised to Flourish at the Turn of the Century." Clin. Microbiol. Rev. 10 (1997): 220-241. PubMed: 9105752.
4. Pollett, S., et al. "Phenotypic and Molecular Characteristics of Carbapenem-Resistant *Enterobacteriaceae* in a Health Care System in Los Angeles, California, from 2011 to 2013." J. Clin. Microbiol. 52 (2014): 4003-4009. PubMed: 25210072.
5. Thiolas, A., et al. "Successive Emergence of *Enterobacter aerogenes* Strains Resistant to Imipenem and Colistin in a Patient." Antimicrob. Agents Chemother. 49 (2005): 1354-1358. PubMed: 15793111.
6. Chevalier, J., et al. "Inhibitors of Antibiotic Efflux in Resistant *Enterobacter aerogenes* and *Klebsiella pneumoniae* Strains." Antimicrob. Agents Chemother. 48 (2004): 1043-1046. PubMed: 14982806.
7. Tuon, F. F., et al. "KPC-Producing *Enterobacter aerogenes* Infection." Braz. J. Infect. Dis. 19 (2015): 324-327. PubMed: 25722130.

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