

## Enterobacter cloacae, Strain 951078

Catalog No. NR-56593

For research use only. Not for use in humans.

Contributor and Manufacturer:  
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### Product Description:

Bacteria Classification: Enterobacteriaceae, Enterobacter

Species: Enterobacter cloacae

Strain: 951078

Original Source: Enterobacter cloacae (E. cloacae), strain 951078 was isolated in 2013 from a wound sample of a 64-year-old female in Kuwait.

Comments: E. cloacae, strain 951078 was deposited as part of the Global Priority Superbugs Collection. NR-56593 was deposited as resistant to aztreonam, cefepime, ceftazidime, ceftazidime/avibactam, ceftriaxone, doripenem, imipenem, meropenem and piperacillin/tazobactam.

E. cloacae is a Gram-negative, rod-shaped, facultatively-anaerobic bacteria that is commensal inhabitant of the human gastrointestinal tract.<sup>1,2</sup> E. cloacae is part of E. cloacae complex and is ubiquitously present in terrestrial and aquatic environments.<sup>2</sup> E. cloacae is considered of clinical significance, with skin and GI tract as the most common sites through which it is contracted, and is increasingly isolated as nosocomial pathogen.<sup>1,2,3</sup> E. cloacae is resistant to ampicillin, cefoxitin and narrow spectrum cephalosporins.<sup>1,2,3</sup> β-lactam antibiotic resistance in E. cloacae is attributed to expression of inducible chromosomal Bush group 1 β-lactamase, acquisition of plasmid-mediated β-lactamases or a combination of these mechanisms.<sup>2,3</sup>

### 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-56593 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: Enterobacter cloacae, Strain 951078, NR-56593."

### 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.

### Disclaimers:

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# References:

1. Sanders, W. E. and C. C. Sanders. "*Enterobacter* spp.: Pathogens Poised to Flourish at the Turn of the Century." Clin. Microbiol. Rev. 10 (1997): 220-241. PubMed: 9105752
2. Mezzatesta, M. L., F. Gona, and S. Stefani. "*Enterobacter cloacae* Complex: Clinical Impact and Emerging Antibiotic Resistance." Future Microbiol. 7 (2012): 887-902. PubMed: 22827309.
3. Rice, L. B. et al. "Outbreak of Ceftazidime Resistance Caused by Extended-Spectrum Beta-Lactamases at a Massachusetts Chronic-Care Facility." Antimicrob. Agents Chemother. 34 (1990): 2193-2199. PubMed: 2073110.
4. Pitout, J. D., et al. "Beta-Lactamases and Detection of Beta-Lactam Resistance in *Enterobacter* spp." Antimicrob. Agents Chemother. 41 (1997): 35-39. PubMed: 8980751.

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