Product Information Sheet for NR-56676

Serratia sp., Strain 938677

Catalog No. NR-56676

For research use only. Not for use in humans.

Contributor and Manufacturer:
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Product Description:
Bacteria Classification: *Enterobacteriaceae*, *Serratia*
Species: *Serratia* sp.
Strain: 938677
Original Source: *Serratia* sp., strain 938677 was isolated in 2013 from a urine sample of a 72-year-old male in Romania.
Comments: *Serratia* sp., strain 938677 was deposited as part of the Global Priority Superbugs Collection. NR-56676 was deposited as resistant to amikacin, amoxicillin/clavulanate, aztreonam, cefepime, ceftazidime, ceftriaxone, ciprofloxacin, piperacillin/tazobactam, tetracycline and trimethoprim/sulfamethoxazole.

Serratia species are Gram-negative, rod-shaped facultative anaerobes that exhibit swarming motility. *Serratia* species are ubiquitous in water, soil and plant surfaces and in the guts of vertebrates and invertebrates.[1,2] *Serratia marcescens*, *S. plymuthica* and *S. rubidae*, produce prodigiosin, a characteristic non-diffusible, water-insoluble red pigment.[1] These opportunistic pathogens are a rising cause of nosocomial infections in immunocompromised patients, particularly in their ability to form biofilms on catheters and other medical devices and contact lenses.[1] Infection by *Serratia* is complicated by an inherent resistance to β-lactam antibiotics in all *Serratia* species, attributed to a natural expression of a chromosomal AmpC gene.[1,3] Intrinsic resistance to the macrolides (linezolid, glycopeptides, quinopristin/dalfopristin, rifampin and nitrofurantoin) have also been identified.[3] Anti-malarial properties of *Serratia* species present in the mid-gut lumen of *Anopheles* mosquitoes have been reported.[4]

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-56676 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: *Serratia* sp., Strain 938677, NR-56676."

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.

Disclaimers:
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References:

1. Mahlen, S. D. "*Serratia* Infections: from Military Experiments to Current Practice." Clin. Microbiol. Rev. 24 (2011): 755-791. PubMed: 21976608.
2. Pei, D., et al. "Draft Genome Sequences of Two Strains of *Serratia* spp. From the Midgut of the Malaria Mosquito *Anopheles gambiae*." Genome Announc. 3 (2015): e00090-15. PubMed: 25767231.
3. Stock, I., et al. "Natural Antimicrobial Susceptibilities of Strains of 'Unsual' *Serratia* Species: *S. ficaria*, *S. fonticola*, *S. odorifera*, *S. plymuthica* and *S. rubidaea*." J. Antimicrob. Chemother. 51 (2003): 865-885. PubMed: 12654765.
4. Bando, H., et al. "Intra-Specific Diversity of *Serratia marcescens* in *Anopheles* Mosquito Midgut Defines *Plasmodium* Transmission Capacity." Sci. Rep. 3 (2013): 1641. PubMed: 23571408.

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