Product Information Sheet for NR-56808

Yersinia pestis, Strain NCTC 5923

Catalog No. NR-56808

For research use only. Not for use in humans.

Contributor:
ATCC®

Manufacturer:
BEI Resources

Product Description:
Bacteria Classification: *Enterobacteriaceae, Yersinia*
Species: *Yersinia pestis*
Strain: Type Strain, NCTC 5923 (ATCC® 19428™)
Comments: Whole genome sequencing of *Yersinia pestis* (*Y. pestis*) strain NCTC 5923 was carried out using the Illumina MiSeq system. The assembled genome analysis indicated the presence of pCD1, pPCP1 and pMT1 plasmids and absence of the 102-kb *pgm* locus.

Y. pestis is an aerobic, non-spore-forming, Gram-negative, rod-shaped bacterium. It is the etiologic agent of bubonic, septicemic and pneumonic plague.[1] Virulence-associated genes are located on the chromosome and on three plasmids found in typical *Y. pestis* strains: 1) pMT1 (pFra; ~ 110 kb), which encodes a murine toxin and capsular protein with anti-phagocytic activities, 2) pCD1 (pYV; ~ 70 kb), which encodes a type III secretion system and is essential for virulence and 3) pPCP1 (pPst; ~ 9.5 kb), which encodes a protease that facilitates the initial dissemination of the bacteria to the lymph nodes.[1,2] Virulence factors on the chromosome are located in an unstable locus, *pgm*.[3]

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-56808 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:
Tryptic Soy broth or Brain Heart Infusion broth
Tryptic Soy agar or Tryptic Soy agar with 5% defibrinated sheep blood agar or Chocolate agar or equivalent
Incubation:
Temperature: 28°C to 37°C
Atmosphere: Aerobic or aerobic with 5%CO_2

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 28°C to 37°C for 1 to 2 days.

Citation:
Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: *Yersinia pestis,* Strain NCTC 5923, NR-56808."

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. Demeure, C. E. et al. "*Yersinia pestis* and Plague: An Updated View on Evolution, Virulence Determinants, Immune Subversion, Vaccination, and Diagnostics." Genes Immun 20 (2019): 357-370. PubMed: 30940874.
2. Parkhill, J., et al. "Genome Sequence of *Yersinia pestis*, the Causative Agent of Plague." Nature 413 (2001): 523-527. PubMed: 11586360.
3. Hare, J. M. and K. A. McDonough. "High-Frequency RecA-Dependent and -Independent Mechanisms of Congo Red Binding Mutations in *Yersinia pestis*." J. Bacteriol. 181 (1999): 4896-4904. PubMed: 10438760.

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