Yersinia pestis, Strain A1122

Catalog No. NR-636
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Contributor:
Centers for Disease Control and Prevention, Division of Vector-Borne Infectious Diseases, Fort Collins, Colorado

Product Description:
Bacteria Classification: Enterobacteriaceae, Yersinia
Agent: Yersinia pestis
Biotype/Biov: Orientalis
Strain: A1122
Original Source: Isolated from a California ground squirrel (Spermophilus beecheyi) in California, U.S.A., 1939

Yersinia pestis (Y. pestis) is the etiologic agent of bubonic, septicemic and pneumonic plague. Three biovars have been associated with the three historically recognized pandemics of Y. pestis. Rodents are the main reservoir, but humans and other animals can also serve as hosts.

Y. pestis is an aerobic, non-spore-forming, gram-negative, rod-shaped bacterium. Virulence-associated genes are located on the chromosome and on three plasmids found in typical virulent 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 (pPla; ~9.5 kb monomer or ~19 kb dimer), which encodes a protease that facilitates the initial dissemination of the bacteria to the lymph nodes. Virulence factors on the chromosome are located in an unstable locus, pgm.5

Y. pestis A1122 contains the 110 kb and the 19 kb plasmids, but lacks the 70 kb plasmid that is essential for virulence as well as the unstable pgm locus.4–6

The presence of the 110 kb and 19 kb plasmids in NR-636 has been confirmed by PCR amplification of plasmid-specific sequences from extracted DNA.

Material Provided:
Each vial contains approximately 0.5 mL of bacterial culture in 0.5X Tryptic Soy Broth supplemented with 10% glycerol. Information on the passage history of NR-636 is described on the Certificate of Analysis for each lot.

Packaging/Storage:
NR-636 was packaged aseptically, in screw-capped plastic cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. Note: The storage temperature indicated on the vial for Lot 4431717 is incorrect. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:
Media:
Brain Heart Infusion Broth or Tryptic Soy Broth
Tryptic Soy Agar or Sheep Blood Agar
Incubation:
Temperature: 28°C or 37°C
Atmosphere: Aerobic with 5% CO2
Propagation:
1. Keep vial frozen until ready for use; thaw slowly.
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 tubes and plate at 28°C or 37°C for 24–48 hours.

Citation:
Acknowledgment for publications should read “The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: Yersinia pestis, Strain A1122, NR-636.”

Biosafety Level: 2

Disclaimers:
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References:

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