**Yersinia pestis,** Strain Kimberley Derivative 12 (D12)

**Catalog No. NR-4694**

For research use only. Not for human use.

**Contributor:** Robert R. Brubaker, Ph.D., Professor, Department of Microbiology and Molecular Genetics, Michigan State University, East Lansing, Michigan

**Product Description:**

**Bacteria Classification:** Enterobacteriaceae, Yersinia

**Species:** Yersinia pestis

**Biotype/Biovar:** Orientalis

**Strain:** Kimberley derivative 12 (D12)

**Source:** Derivative 12 of the Kimberley strain, which originated in Africa

*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:* Antiqua, Medievalis, and Orientalis. Rodents are the main reservoir and the organism is transmitted to humans through the bite of an infected flea. 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 *Y. pestis* strains: 1) pMT1 (pFra; ~ 100 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 (pPia; ~ 9.5 kb), 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.*

*Y. pestis,* strain Kimberley(D12) contains the pMT1 and pPCP1 plasmids as well as the unstable *pgm* locus, but lacks the pCD1 plasmid that is essential for virulence.

The presence of the pMT1 and pPCP1 plasmids in NR-4694 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.

**Note:** If homogeneity is required for your intended use, please purify prior to initiating work.

**Packaging/Storage:**

NR-4694 was packaged aseptically in screw-capped plastic cryovials. The product is provided frozen and should be stored at -80°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 Sheep Blood Agar

**Incubation:**

Temperature: 28°C or 37°C

**Atmosphere:** Aerobic

**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 to 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 Kimberley Derivative (D12), NR-4694."

**Biosafety Level:** 2


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References:
5. Robert R. Brubaker, personal communication.

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