Product Information Sheet for NR-2718

Genomic DNA from *Yersinia pestis*, Strain PB6

Catalog No. NR-2718

This reagent is the property of the U.S. Government.

For research use only. Not for human use.

Contributor:

Centers for Disease Control and Prevention, Division of Vector-Borne Infectious Diseases, Fort Collins, Colorado

Product Description:

Genomic DNA was isolated from a preparation of *Yersinia pestis (Y. pestis)*, strain PB6.

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; ~ 110kb), 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.[1] Virulence factors on the chromosome are located in an unstable locus, *pgm*.[2]

Y. pestis PB6 was isolated from a flea in India, 1955.[3] It contains the 70 kb virulence plasmid and the *pgm* locus,[4] but lacks the 110 kb and 9.5 kb virulence plasmids.

The presence of the 70 kb plasmid in NR-2718 has been confirmed by PCR amplification of a virulence marker on the plasmid. NR-2718 has been qualified for PCR applications by amplification of ~ 1500 bp of the 16S ribosomal RNA gene as well as a virulence marker sequence of ~ 1900 bp.

Material Provided:

Each vial contains approximately 5 μg of bacterial genomic DNA in TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH ~ 7.4). The concentration, expressed as μg per μL, is shown on the Certificate of Analysis. The vial should be centrifuged prior to opening.

Packaging/Storage:

NR-2718 was packaged aseptically in screw-capped plastic cryovials. The product is provided frozen on dry ice and should be stored at -20°C or colder immediately upon arrival. Freeze-thaw cycles should be minimized.

Citation:

Acknowledgment for publications should read "The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: Genomic DNA from *Yersinia pestis*, Strain PB6, NR-2718."

Biosafety Level: 1

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. 4th ed. Washington, DC: U.S. Government Printing Office, 1999. HHS Publication No. (CDC) 93-8395. This text is available online at www.cdc.gov/od/ohs/biosfty/bmbl4/bmbl4toc.htm.

Disclaimers:

You are authorized to use this product for research use only. It is not intended for human use.

Use of this product is subject to the terms and conditions of the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at www.beiresources.org.

While BEI Resources uses reasonable efforts to include accurate and up-to-date information on this product sheet, neither ATCC® nor the U.S. Government make any warranties or representations as to its accuracy. Citations from scientific literature and patents are provided for informational purposes only. Neither ATCC® nor the U.S. Government warrants that such information has been confirmed to be accurate.

This product is sent with the condition that you are responsible for its safe storage, handling, use and disposal. ATCC® and the U.S. Government are not liable for any damages or injuries arising from receipt and/or use of this product. While reasonable effort is made to ensure authenticity and reliability of materials on deposit, the U.S. Government, ATCC®, their suppliers and contributors to BEI Resources are not liable for damages arising from the misidentification or misrepresentation of products.

Use Restrictions:

This material is distributed for internal research, non-commercial purposes only. This material, its product or its derivatives may not be distributed to third parties. Except as performed under a U.S. Government contract, individuals contemplating commercial use of the material, its products or its derivatives must contact the contributor to negotiate a license. U.S. Government contractors may need a license before first commercial sale.

References:

1. Parkhill, J., et al. "Genome Sequence of *Yersinia pestis*, the Causative Agent of Plague." Nature 413 (2001): 523–527. PubMed: 11586360.
2. Hare, J. M. and K. A. McDonough. "High-Frequency RecA-Dependent and -Independent Mechanisms of

Biodefense and Emerging Infections Research Resources Repository
P.O. Box 4137
Manassas, VA 20108-4137 USA
www.beiresources.org

800-359-7370
Fax: 703-365-2898
E-mail: contact@beiresources.org

Congo Red Binding Mutations in *Yersinia pestis*." J. Bacteriol. 181 (1999): 4896–4904. PubMed: 10438760.
3. Radnedge, L., P. G. Agron, P. L. Worsham, and G. L. Andersen. "Genome Plasticity in *Yersinia pestis*." Microbiology 148 (2002): 1687–1698. PubMed: 12055289.
4. Hinchcliffe, S. J., et al. "Application of DNA Microarrays to Study the Evolutionary Genomics of *Yersinia pestis* and *Yersinia pseudotuberculosis*." Genome Res. 13 (2003): 2018–2029. PubMed: 12952873.
5. Chu, M. C. Laboratory Manual of Plague Diagnostic Tests. Centers for Disease Control and Prevention, Atlanta, 2000.
6. Prentice, M. B., et al. "*Yersinia pestis* pFra Shows Biovar-Specific Differences and Recent Common Ancestry with a *Salmonella enterica* Serovar Typhi Plasmid." J. Bacteriol. 183 (2001): 2586–2594. PubMed: 11274119.

Biodefense and Emerging Infections Research Resources Repository
P.O. Box 4137
Manassas, VA 20108-4137 USA
www.beiresources.org

800-359-7370
Fax: 703-365-2898
E-mail: contact@beiresources.org