

Genomic DNA from *Yersinia pestis*, Strain A12 Derivative 6 (D6)**Catalog No. NR-4713****For research use only. Not for human use.****Contributor:**

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Product Description:

Genomic DNA was isolated from a preparation of *Yersinia pestis* (*Y. pestis*), strain A12 derivative 6 (D6).

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; ~ 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), 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, strain A12(D6) is a derivative of the A12 strain, which in turn is a derivative of the avirulent A1122 strain³, originally isolated in 1939 from a California ground squirrel (*Spermophilus beecheyi*).⁴ *Y. pestis*, strain A12(D6) contains the pMT1 plasmid but lacks the pCD1 plasmid that is essential for virulence and the pPCP1 plasmid, as well as the chromosomal virulence-associated locus *pgm*.⁵

The presence of the pMT1 plasmid in NR-4713 has been confirmed by PCR amplification of a virulence marker on this plasmid. NR-4713 has been qualified for PCR applications by amplification of approximately 1500 bp of the 16S ribosomal RNA gene as well as a virulence marker sequence of approximately 1200 bp.

Material Provided:

Each vial contains approximately 4 to 6 µg of bacterial genomic DNA in TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH ~ 7.4). The concentration is shown on the Certificate of Analysis. The vial should be centrifuged prior to opening.

Packaging/Storage:

NR-4713 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 A12 Derivative 6 (D6), NR-4713."

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. 5th ed. Washington, DC: U.S. Government Printing Office, 2007; see www.cdc.gov/od/ohs/biosfty/bmbl5/bmbl5toc.htm.

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References:

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5. Robert R. Brubaker, personal communication.
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