Genomic DNA from *Yersinia pestis*, Strain KIM Derivative 22 (D22)

**Catalog No. NR-4708**

For research use only. Not for human use.

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**Product Description:**
Genomic DNA was isolated from a preparation of *Yersinia pestis* (Y. pestis), strain KIM Derivative 22 (D22).

*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 (pPla; ~ 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.¹

*Y. pestis*, strain KIM(D22) is an avirulent derivative of the highly virulent KIM strain, which was originally isolated from a Kurdistan Iran man (KIM). *Y. pestis*, strain KIM(D22) contains the pMT1 plasmid as well as the unstable chromosomal pgm locus, but lacks the pCD1 and pPCP1 plasmids that are essential for virulence.² The complete sequence of the chromosome (4,600,755 bp; GenBank: AE009952),³ pMT1 (100,984 bp; GenBank: AF074611), pCD1 (70,504 bp; GenBank: AF074612), and pPCP1 (9,610 bp; GenBank: AF053945) from *Y. pestis*, strain KIM have been determined.⁴

The presence of the pMT1 plasmid in NR-4708 has been confirmed by PCR amplification of a virulence marker on the plasmid. NR-4708 has been qualified for PCR applications by amplification of approximately 1500 bp of the 16S ribosomal RNA gene, 800 bp of a *Y. pestis* specific sequence, as well as the 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-4708 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 Infectious Research Resources Repository, NIAID, NIH: Genomic DNA from *Yersinia pestis*, Strain KIM Derivative 22 (D22), NR-4708.”

**Biosafety Level:** 1

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References:


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