Certificate of Analysis for NR-4709

Genomic DNA from *Yersinia pestis*, Strain KIM Derivative 23 (D23)

Catalog No. NR-4709

Product Description: Genomic DNA was isolated from a preparation of *Yersinia pestis* (*Y. pestis*), strain KIM Derivative 23 (D23). *Y. pestis*, strain KIM(D23) is an avirulent derivative that contains the pMT1, but lacks the pCD1 and pPCP1 plasmids that are essential for virulence as well as the unstable chromosomal *pgm* locus.

Lot[1]: 58324524 **Manufacturing Date: 23SEP2008**

TEST	SPECIFICATIONS	RESULTS
Sequencing of 16S Ribosomal RNA Gene (~ 1420 bp)	Identical to BEI Resources NR-4685 Identical to GenBank AE009952 Consistent with *Y. pestis*	Identical to BEI Resources NR-4685 Identical to GenBank AE009952 Consistent with *Y. pestis*[2]
Presence of Plasmids Confirmed by PCR Amplification pMT1 (pFra; 100 kb plasmid) pCD1 (pYV; 70 kb plasmid) pPCP1 (pPla; 9.5 kb plasmid)	 Positive Negative Negative	 Positive Negative Negative
Agarose Gel Electrophoresis	High molecular weight chromosomal DNA	High molecular weight chromosomal DNA (Figure 1)
Concentration by PicoGreen® Measurement	4 to 6 µg in 25 to 100 µL per vial	5.3 µg in 37 µL per vial (144 µg/mL)
Functional Activity by PCR Amplification *Y. pestis* specific sequence (YPO0396)[3] 16S ribosomal RNA gene Virulence-associated plasmids pMT1 (pFra; 100 kb plasmid) pCD1 (pYV; 70 kb plasmid) pPCP1 (pPla; 9.5 kb plasmid)	 ~ 800 bp amplicon ~ 1500 bp amplicon ~ 1200 bp amplicon None detected None detected	 ~ 800 bp amplicon ~ 1500 bp amplicon ~ 1200 bp amplicon None detected None detected
OD_{260}/OD_{280} Ratio	1.7 to 1.9	1.9
Bacterial Inactivation 10% of total yield plated on Tryptic Soy Agar[4,5]	 No viable bacteria detected	 No viable bacteria detected

[1] *Y. pestis*, strain KIM(D23) was deposited by Professor Robert R. Brubaker of the Department of Microbiology and Molecular Genetics at Michigan State University, East Lansing, Michigan. The bacterial preparation used for extraction of genomic DNA was produced by broth (Tryptic Soy Broth; BD 211768) culture of the deposited material. After incubation for 48 hours at 28°C and aerobic atmosphere, genomic DNA was extracted using proprietary technology.

[2] Also consistent with other *Yersinia* species

[3] Sequence locus tag YPO0396 codes for an uncharacterized protein that is highly conserved in *Y. pestis*

[4] 7 days at 28°C in an aerobic atmosphere

[5] An extraction procedure was used that has been shown to consistently inactivate 100% of Gram-negative bacteria.

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Certificate of Analysis for NR-4709

Date: 05 NOV 2008 **Signature:** Signature on File

Title: Technical Manager, BEI Authentication or designee

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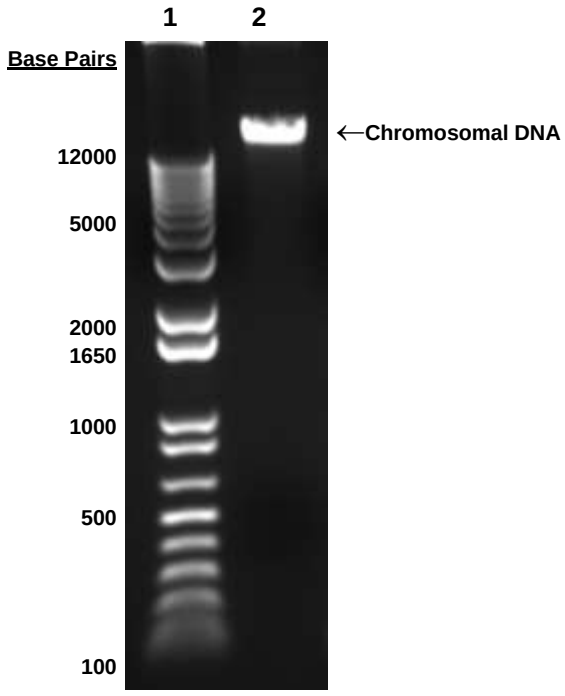
Figure 1



Lane 1: Invitrogen™ TrackIt™ 1 Kb Plus DNA Ladder
Lane 2: 200 ng of NR-4709

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