

Yersinia pestis, Strain KIM Derivative 23 (D23)

Catalog No. NR-4685

Product Description: *Yersinia pestis* (*Y. pestis*) is an aerobic, non-spore-forming, Gram-negative rod-shaped bacterium. *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.

Lot¹: 58324515

Manufacturing Date: 10SEP2008

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis Cellular morphology Colony morphology ² Congo red (CR) agar ^{3,4} Biochemical Analyses Analytical profile index (API 20 E®) Nitrate reduction Fermentation of glycerol Urease	Gram-negative rods Report results No red colonies (crb) Consistent with <i>Y. pestis</i> Negative Positive Negative	Gram-negative rods Circular, convex, entire and opaque (Figure 1) No red colonies (crb) Consistent with <i>Y. pestis</i> Negative Positive Negative
Genotypic Analysis Sequencing of 16S ribosomal RNA gene (~ 1420 bp)	Consistent with <i>Y. pestis</i> Identical to GenBank: AE009952	Consistent with <i>Y. pestis</i> ⁵ Identical to GenBank: AE009952
PCR Assay of Extracted DNA <i>Y. pestis</i> specific sequence (YPO0396) ⁶ 16S ribosomal RNA gene Presence of 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
Viability (post-freeze)²	Growth on agar	Growth on agar

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. NR-4685 was prepared by broth (Tryptic Soy Broth; BD 211768) culture of the deposited material for 48 hours at 28°C and aerobic atmosphere.

²48 hours at 28°C and aerobic atmosphere on Tryptic Soy Agar (BD 236950)

³7 days at 28°C and aerobic atmosphere on CR agar

⁴Hare, J. M. and K. A. McDonough. "High-Frequency RecA-Dependent and -Independent Mechanisms of Congo Red Binding Mutations in *Yersinia pestis*." *J. Bacteriol.* 181 (1999): 4896-4904. PubMed: 10438760.

⁵Also consistent with other *Yersinia* species

⁶Sequence locus tag YPO0396 codes for an uncharacterized protein that is highly conserved in *Y. pestis*

Figure 1



Date: 04 NOV 2008

Signature: Signature on File

Title: Technical Manager, BEI Authentication or designee

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