

## *Yersinia pestis*, Strain Kuma Derivative 7 (D7)

**Catalog No. NR-4690**

**Product Description:** *Yersinia pestis* (*Y. pestis*) is an aerobic, non-spore-forming, Gram-negative rod-shaped bacterium. *Y. pestis*, strain Kuma(D7) is an avirulent derivative of the Kuma strain which contains the pMT1 and pPCP1 plasmids as well as the unstable *pgm* locus, but lacks the pCD1 plasmid that is essential for virulence.

**Lot<sup>1</sup>: 57753202**

**Manufacturing Date: 13JUL2007**

TEST	SPECIFICATIONS	RESULTS
<b>Phenotypic Analysis</b> Cellular morphology Colony morphology <sup>2</sup>  Congo red (CR) agar <sup>3,4</sup> Biochemical Analyses Analytical profile index (API 20 E®) Nitrate reduction Fermentation of glycerol Urease	Gram-negative rods Report results  Red colonies (Crb <sup>+</sup> )  Consistent with <i>Y. pestis</i> Positive Positive Negative	Gram-negative rods Circular, slightly irregular, low convex, opaque (Figure 1) Red colonies (Crb <sup>+</sup> )  Consistent with <i>Y. pestis</i> Positive Positive Negative
<b>Genotypic Analysis</b> Sequencing of 16S ribosomal RNA gene (~ 1440 bp)	Consistent with <i>Y. pestis</i>	Consistent with <i>Y. pestis</i> <sup>5</sup>
<b>PCR Assay of Extracted DNA</b> 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)	~ 1500 bp amplicon  ~ 1200 bp amplicon None detected ~ 400 bp amplicon	~ 1500 bp amplicon  ~ 1200 bp amplicon None detected ~ 400 bp amplicon
<b>Viability (post-freeze)<sup>4</sup></b>	Growth on agar	Growth on agar

<sup>1</sup>*Y. pestis*, strain Kuma(D7) was deposited by Professor Robert R. Brubaker of the Department of Microbiology and Molecular Genetics at Michigan State University, East Lansing, Michigan. NR-4690 was prepared by broth (Tryptic Soy Broth; BD 211768) culture of the deposited material. Broth inoculum was added to Kolles which were grown 48 hours at 28°C and aerobic atmosphere to produce this lot.

<sup>2</sup>48 hours at 28°C and aerobic atmosphere on Tryptic Soy Agar (BD 236950)

<sup>3</sup>1 to 4 days at 28°C and aerobic atmosphere on CR agar

<sup>4</sup>Hare, 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.

<sup>5</sup>Also consistent with other *Yersinia* species

**Figure 1**



**Date:** 04 SEP 2008

**Signature:** Signature on File

**Title:** Technical Manager, BEI Authentication or designee

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