

## *Yersinia pestis*, Strain K25 Derivative 72 (D72)

**Catalog No. NR-4697**

**Product Description:** *Yersinia pestis* (*Y. pestis*) is an aerobic, non-spore-forming, Gram-negative rod-shaped bacterium. *Y. pestis*, strain K25(D72) is an avirulent derivative of the K25 strain that contains the pMT1 and pPCP1 plasmids as well as the unstable chromosomal *pgm* locus, but lacks the pCD1 plasmid that is essential for virulence. This preparation contains two different colony morphologies that have been individually characterized and are shown to be identical in the assays utilized.

**Lot<sup>1</sup>: 57988654**

**Manufacturing Date: 16NOV2007**

TEST	SPECIFICATIONS	RESULTS	
<b>Phenotypic Analysis</b> Cellular morphology Colony morphology <sup>2</sup>  Congo red (CR) agar <sup>4,5</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> Negative Positive Negative	<b>Colony type 1</b> Gram-negative rods Circular, convex, entire, opaque (Figure 1) Red colonies (Crb <sup>+</sup> )  Consistent with <i>Y. pestis</i> Negative Positive Negative	<b>Colony type 2</b> Gram-negative rods Circular, convex, entire, opaque, pinpoint (Figure 1) Red colonies (Crb <sup>+</sup> )  Consistent with <i>Y. pestis</i> Negative Positive Negative
<b>Genotypic Analysis</b> Sequencing of 16S ribosomal RNA gene (~ 1400 bp)	Consistent with <i>Y. pestis</i>	Consistent with <i>Y. pestis</i> <sup>6</sup>	Consistent with <i>Y. pestis</i> <sup>6</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 (pPIa; ~ 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	~ 1500 bp amplicon  ~ 1200 bp amplicon None detected ~ 400 bp amplicon
<b>Viability (post-freeze)<sup>2</sup></b>	Growth on agar	Growth on agar	Growth on agar

<sup>1</sup>*Y. pestis*, strain K25(D72) was deposited by Professor Robert R. Brubaker of the Department of Microbiology and Molecular Genetics at Michigan State University, East Lansing, Michigan. NR-4697 was prepared by broth (Tryptic Soy Broth; BD 211768) culture of the deposited material and grown 48 hours at 28°C and aerobic atmosphere. 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)

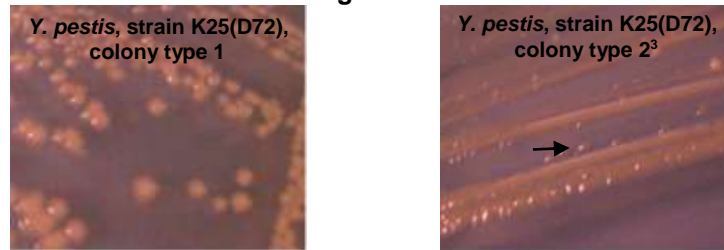
<sup>3</sup>Colony type 2 grows on top of colony type 1

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

<sup>5</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>6</sup>Also consistent with other *Yersinia* species

Figure 1



**Date:** 13 AUG 2008

**Signature:** Signature on File

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

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