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SUPPORTING INFECTIOUS DISEASE RESEARCH

Certificate of Analysis for NR-9721

Francisella tularensis subsp. *novicida*, Strain ΔPdpD

Catalog No. NR-9721

Product Description: *Francisella tularensis* (*F. tularensis*) subsp. *novicida*, strain ΔPdpD is a transposon mutant of the wild-type strain U112, in which the *pdpD* gene region has been replaced with a mini-Tn*5* insert, rendering it resistant to kanamycin.

Lot[1]: 58607107 **Manufacturing Date: 15MAY2009**

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-negative coccobacillus	Gram-negative coccobacillus
Colony morphology[2]	Report results	Circular, convex, entire, opaque and gray (Figure 1)
Growth in the absence of cysteine	Growth	Growth
Motility	Non-motile	Non-motile
β-hemolysis	Non-hemolytic	Non-hemolytic
X- and V-factor requirements	Negative	Negative
CO_2 requirement	Negative	Negative
Biochemical tests		
Catalase	Positive	Positive
Oxidase	Negative	Negative
Urease	Negative	Negative
Nitrate	Negative	Negative
Indole	Negative	Negative
Hydrogen sulfide production	Report results	Negative
Glucose	Positive	Positive
Maltose	Report results	Positive
Sucrose	Positive	Positive
Glycerol	Positive	Positive
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 1370 bp)	Consistent with *F. tularensis*	Consistent with *F. tularensis*
Molecular Subtyping by PCR Amplification of Subspecies-Specific Sequence from Extracted DNA[3]	~ 1500 bp amplicon (subsp. *tularensis*) ~ 900 bp amplicon (subsp. *holarctica*) ~ 3300 bp amplicon (subsp. *novicida*)	~ 3300 bp amplicon (subsp. *novicida*)
Viability (post-freeze)[2]	Growth	Growth

[1] *F. tularensis* subsp. *novicida*, strain ΔPdpD was deposited by Francis E. Nano, Ph.D., Department of Biochemistry and Microbiology, University of Victoria, Victoria, British Columbia, Canada. NR-9721 was produced by inoculation of the deposited material into Brain Heart Infusion Broth and grown 24 hours at 37°C. Broth inoculum was added to Chocolate agar Kolles which were grown 24 hours at 37°C to produce this lot.

[2] 24 hours at 37°C on chocolate agar (GC agar)

[3] Broekhuijsen, M., et al. "Genome-Wide DNA Microarray Analysis of *Francisella tularensis* Strains Demonstrates Extensive Genetic Conservation within the Species but Identifies Regions that are Unique to the Highly Virulent *F. tularensis* subsp. *tularensis*." J. Clin. Microbiol. 41 (2003): 2924-2931. PubMed: 12843022

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Figure 1

Date: 09 MAR 2011 **Signature:**

Title: Technical Manager, BEI Authentication or designee

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