b|e|i RESOURCES
SUPPORTING INFECTIOUS DISEASE RESEARCH

Certificate of Analysis for NR-574

Francisella tularensis subsp. *novicida*, Strain JMB1

Catalog No. NR-574

Product Description: *Francisella tularensis* (*F. tularensis*) subsp. *novicida*, strain JMB1 is a derivative of the wild-type strain U112 that is deficient in DNA repair and related functions.

Lot[1]: 4059343 **Manufacturing Date: 24FEB2005**

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-negative coccobacillus	Gram-negative coccobacillus
Colony morphology[2]	Report results	Circular, convex, entire, opaque, and mucoid
Hemolysis	Non-hemolytic	Non-hemolytic
Motility	Non-motile	Non-motile
X- and V-factor requirements	Negative	Negative
Biochemical tests		
Catalase	Positive	Positive
Oxidase	Negative	Negative
Urease	Negative	Negative
Sucrose	Positive	Positive
Indole	Report results	Negative
Hydrogen sulfide production	Report results	Positive
Nitrate	Report results	Negative
Glucose	Report results	Positive
Maltose	Report results	Positive
Glycerol	Report results	Negative
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 480 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 JMB1 was deposited by Francis E. Nano, Ph.D., Department of Biochemistry and Microbiology, University of Victoria, Victoria, British Columbia, Canada. NR-574 was prepared by broth/agar culture of the deposited material.
[2] 24 hours at 37°C and aerobic atmosphere with 5% CO_2 on Cystine Heart Agar plus 5% defibrinated rabbit blood.
[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

Date: 09 MAR 2011 **Signature:** 

Title: Technical Manager, BEI Authentication or designee

ATCC®, on behalf of BEI Resources, hereby represents and warrants that the material provided under this certificate has been subjected to the tests and procedures specified and that the results described, along with any other data provided in this certificate, are true and accurate to the best of ATCC®'s knowledge.

ATCC® is a trademark of the American Type Culture Collection.
You are authorized to use this product for research use only. It is not intended for human use.

Support Provided by NIAID

Biodefense and Emerging Infections Research Resources Repository
www.beiresources.org
E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898