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SUPPORTING INFECTIOUS DISEASE RESEARCH

Certificate of Analysis for NR-13

Francisella tularensis subsp. *novicida*, Strain Utah 112

Catalog No. NR-13

Product Description: *Francisella tularensis (F. tularensis)* subsp. *novicida* is a Gram-negative, facultative intracellular bacterium which displays a moderate degree of human virulence.

Lot[1]: 3670413 **Manufacturing Date: 22APR2004**

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-negative rod	Gram-negative rod
Colony morphology[2]	Report results	Circular, convex, entire, gray-white, and glistening
Hemolysis	Non-hemolytic	Non-hemolytic
X- and V-factor requirements	Negative	Negative
Biochemical tests		
Catalase	Positive	Positive
Oxidase	Negative	Negative
Urease	Negative	Negative
Sucrose	Positive	Indeterminate[3]
Hydrogen sulfide production	Report results	Negative
Nitrate	Report results	Negative
Glucose	Report results	Positive
Maltose	Report results	Negative
Indole	Report results	Negative
FAME analysis	Consistent with *F. tularensis*	Consistent with *F. tularensis*
Growth in the absence of cysteine	Positive	Positive
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (280 bp)	Consistent with *F. tularensis* subsp. *novicida*	Consistent with *F. tularensis* subsp. *novicida*[4]
Viability (post-freeze)[2]	Growth on agar	Growth on agar

[1]NR-13 was produced by propagation of ATCC® 15482™ (Lot: 20289) on Cystine Heart Agar (BD 247100) plus 5% defibrinated rabbit blood in an aerobic atmosphere with 5% CO_2 for 24 hours at 37°C.
[2]24 hours at 37°C and aerobic atmosphere with 5% CO_2 on Cystine Heart Agar plus 5% defibrinated rabbit blood
[3]The fermentation of sucrose is detected using Cystine Trypticase Agar containing sucrose and phenol red as a pH indicator. A positive result for sucrose fermentation is indicated by the broth turning yellowish-orange (pH below 6.8) and a negative result is indicated by the broth remaining red. In this case the color change did not indicate a positive or negative result. The presence of glucose may interfere with sucrose fermentation and produce a false negative result.
[4]Also consistent with other *F. tularensis* subspecies

Date: 12 AUG 2008 **Signature:** Signature on File

Title: Technical Manager, BEI Authentication or designee

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