

***Francisella tularensis* subsp. *holarctica*, CDC Live Vaccine Strain**

**Catalog No. NR-646**

This reagent is the tangible property of the U.S. Government.

**Product Description:**

A single colony isolate of *Francisella tularensis* (*F. tularensis*) subsp. *holarctica*, CDC LVS was deposited to BEI Resources from the CDC Reference Collection. The CDC LVS is reported to be derived from a Russian water rat isolate obtained in the 1950's. There is no documentation to indicate that this strain is the Live Vaccine Strain that was produced by the National Drug Company. The deposited material was prepared by Brain Heart Infusion broth culture of a single colony isolated from the CDC Reference Collection stock. NR-646 was produced by inoculation of BEI Resources seed lot 4249831 into Brain Heart Infusion broth and grown for 1 day at 37°C in an aerobic atmosphere with 5% CO<sub>2</sub>. Broth inoculum was added to Cysteine Heart agar with 5% defibrinated rabbit blood kolles, which were grown for 1 day at 37°C in an aerobic atmosphere with 5% CO<sub>2</sub> to produce this lot. Quality control testing was completed under propagation conditions unless otherwise noted.

**Lot: 70048831**

**Manufacturing Date: 01DEC2021**

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TEST	SPECIFICATIONS	RESULTS
<b>Phenotypic Analysis</b> Cellular morphology 1 day at 37°C in an aerobic atmosphere with 5% CO <sub>2</sub> on Cysteine Heart agar with 5% defibrinated rabbit blood Colony morphology 1 day at 37°C in an aerobic atmosphere with 5% CO <sub>2</sub> on Cysteine Heart agar with 5% defibrinated rabbit blood Motility BBL™ Motility Test Medium w/TTC Indicator for 2 days at 37°C in an aerobic atmosphere with 5% CO <sub>2</sub> Hemolysis Biochemical tests Catalase Oxidase Urease Indole Hydrogen sulfide production Nitrate Glucose Maltose Sucrose	Gram-negative coccobacillus  Report results  Report results  Non-hemolytic  Positive Negative Negative Report results Report results Report results Report results Report results	Gram-negative coccobacillus  Punctiform (Figure 1)  Non-motile  Non-hemolytic  Positive Negative Negative Negative Positive Negative Positive Positive Negative
<b>Genotypic Analysis</b> Sequencing of 16S ribosomal RNA gene (~ 1450 base pairs)	≥ 99% sequence identity to <i>F. tularensis</i> subsp. <i>holarctica</i> , Strain 211 (GenBank: JACYFN010000082.1)	100% sequence identity to <i>F. tularensis</i> subsp. <i>holarctica</i> , Strain 211 (GenBank: JACYFN010000082.1) <sup>1</sup>

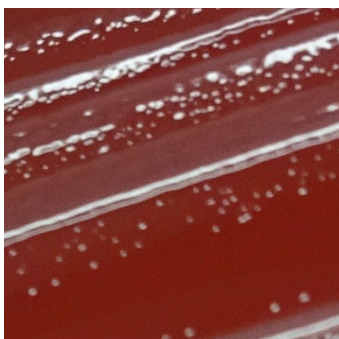
TEST	SPECIFICATIONS	RESULTS
<b>Molecular Subtyping by PCR Amplification of Subspecies-Specific Sequence from Extracted DNA<sup>2</sup></b>	~ 1250 base pair amplicon (Type B)	~ 1250 base pair amplicon (Type B) <sup>3</sup>
<b>Purity</b> Cysteine Heart agar with 5% defibrinated rabbit blood 7 days at 37°C in an aerobic atmosphere with 5% CO <sub>2</sub> Tryptic Soy agar with 5% defibrinated sheep blood 7 days at 37°C in an aerobic atmosphere with 5% CO <sub>2</sub>	Growth consistent with expected colony morphology Growth consistent with expected colony morphology	Growth consistent with expected colony morphology Growth consistent with expected colony morphology
<b>Viability</b> 1 day at 37°C in an aerobic atmosphere with 5% CO <sub>2</sub> on Cysteine Heart agar with 5% defibrinated rabbit blood	Growth	Growth

<sup>1</sup>Also consistent other *F. tularensis* subspecies

<sup>2</sup>Petersen, J. M., et al. "Laboratory Analysis of Tularemia in Wild-Trapped, Commercially Traded Prairie Dogs, Texas, 2002." *Emerg. Infect. Dis.* 10 (2004): 419-425. PubMed: 15109407.

<sup>3</sup>Performed on BEI Resources seed lot 4249831.

Figure 1: Colony Morphology



/Heather Couch/  
Heather Couch

31 MAY 2022

Program Manager or designee, ATCC Federal Solutions

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