

***Francisella tularensis* subsp. *novicida*, Strain CG116**

Catalog No. NR-582

For research use only. Not for human use.

Contributor:

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Product Description:

Bacteria Classification: *Francisellaceae*, *Francisella*

Agent: *Francisella tularensis* subsp. *novicida*

Strain: CG116

Comments: *Francisella tularensis* subsp. *novicida*, strain CG116 is a transposon mutant of wild-type strain U112, with diminished ability to grow in mouse macrophages.¹ The DNA sequence flanking the transposon insertion points has been submitted (GenBank: AY293579).^{1,2}

Francisella tularensis (*F. tularensis*) is one of the most infectious bacterial pathogens known and is the causative agent of the febrile zoonotic disease tularemia. The natural reservoir of the bacterium is thought to be rodents, although most human cases result from the bite of a blood-feeding arthropod vector.³

F. tularensis subsp. *novicida* is a Gram-negative, facultative bacterium, which grows predominantly in macrophages when living in mammalian hosts.⁴ It is commonly used for studying *F. tularensis* pathogenesis since it is highly virulent in mice but has minor effects on humans.³

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in 0.5X Tryptic Soy Broth supplemented with 10% glycerol.

Packaging/Storage:

NR-582 was packaged aseptically in screw-capped plastic cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:

Media:

Trypticase Soy Agar or Broth with 0.1% cysteine
Cystine Heart Agar with 5% defibrinated rabbit blood

Incubation:

Temperature: 37°C

Atmosphere: Aerobic with 5% CO₂

Propagation:

1. Keep vial frozen until ready for use; thaw slowly.

2. Transfer the entire thawed aliquot into a single tube of broth.
3. Use several drops of the suspension to inoculate an agar slant and/or plate.
4. Incubate the tubes and plate at 37°C for 24–48 hours.

Citation:

Acknowledgment for publications should read “The following reagent was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH: *Francisella tularensis* subsp. *novicida*, Strain CG116, NR-582.”

Biosafety Level: 2

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 5th ed. Washington, DC: U.S. Government Printing Office, 2007; see www.cdc.gov/od/ohs/biosfty/bmb15/bmb15toc.htm.

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References:

1. Gray, C. G., et al. "The Identification of Five Genetic Loci of *Francisella novicida* Associated with Intracellular Growth." FEMS Microbiol. Lett. 215 (2002): 53–56. PubMed: 12393200.
2. Nano, F. E., et al. "A *Francisella tularensis* Pathogenicity Island Required for Intramacrophage Growth." J. Bacteriol. 186 (2004): 6430–6436. PubMed: 15375123.
3. de Bruin, O. M., J. S. Ludu, and F. E. Nano. "The *Francisella* Pathogenicity Island Protein IglA Localizes to the Bacterial Cytoplasm and Is Needed for Intracellular Growth." BMC Microbiol. 7 (2007): 1–10. PubMed: 17233889.
4. McLendon, M. K., M. A. Apicella, and L. A. Allen. "*Francisella tularensis*: Taxonomy, Genetics, and Immunopathogenesis of a Potential Agent of Biowarfare." Annu. Rev. Microbiol. 60 (2006): 167–185. PubMed: 16704343.
5. 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.
6. Kugeler, K. J., et al. "Real-time PCR for *Francisella tularensis* Types A and B." Emerg. Infect. Dis. 12 (2006): 1799–1801. PubMed: 17283646.

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