

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

Catalog No. NR-9713

For research use only. Not for human use.

Contributor:

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Product Description:

Bacteria Classification: *Francisellaceae*, *Francisella*

Species: *Francisella tularensis* subsp. *novicida*

Strain: ΔIglD

Original Source: *Francisella tularensis* (*F. tularensis*) subsp. *novicida*, strain ΔIglD is a transposon mutant of the wild-type strain U112, in which the *iglD* gene region has been replaced with a mini-Tn5 insert, rendering it resistant to kanamycin.¹

Francisella tularensis subsp. *novicida*, strain ΔIglD is excluded from Select Agent status. Please see <http://www.cdc.gov/od/sap/sap/exclusion.htm#background>.

F. tularensis is one of the most infectious bacterial pathogens known and is the causative agent of the febrile zoonotic disease tularemia. The environmental reservoir of the bacterium is unknown, although most human cases result from the bite of a blood-feeding arthropod vector.²

F. tularensis subsp. *novicida* is a Gram-negative, facultative bacterium, which grows predominantly in macrophages when living in mammalian hosts.³ It is commonly used for studying *F. tularensis* pathogenesis since it is highly virulent in mice but has minor effects on humans.²

The subspecies designation of NR-9713 has been confirmed by PCR amplification of an approximately 3300 base pair subspecies specific sequence (RD-1; Region of Difference-1)⁴ from extracted DNA.

Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in 0.5X Brain Heart Infusion Broth supplemented with 10% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

Packaging/Storage:

NR-9713 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:

Brain Heart Infusion or Tryptic Soy Broth with 0.1% cysteine
Tryptic Soy Agar with 0.1% cysteine, Cystine Heart Agar with 5% defibrinated rabbit blood or Chocolate Agar (GC Agar)

Incubation:

Temperature: 37°C

Atmosphere: Aerobic

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 to 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 ΔIglD, NR-9713."

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. Larson, C. L., W. Wicht, and W. L. Jellison. "A New Organism Resembling *P. tularensis* Isolated from Water." Public Health Rep. 70 (1955): 253-258. PubMed: 14357545.
2. de Bruin, O. M., J. S. Ludu, and F. E. Nano. "The *Francisella* Pathogenicity Island Protein IgIA Localizes to the Bacterial Cytoplasm and Is Needed for Intracellular Growth." BMC Microbiol. 7 (2007): 1-10. PubMed: 17233889.
3. McLendon, M. K., M. A. Apicella, and L.-A. H. Allen. "*Francisella tularensis*: Taxonomy, Genetics, and Immunopathogenesis of a Potential Agent of Biowarfare." Annu. Rev. Microbiol. 60 (2006): 167-185. PubMed: 16704343.
4. 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.
5. Nano, F. E. et al. "A *Francisella tularensis* Pathogenicity Island Required for Intramacrophage Growth." J. Bacteriol. 186 (2004): 6430-6436. PubMed: 15375123.

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