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Case of Congenital Tularemia with Neuroinvasive Disease, Utah, USA

Appendix

Appendix Table. BLAST alignment of mcfDNA fragments supports identification of *Francisella tularensis*. Microbial cell-free DNA fragments were processed from a neonatal sample at 4 weeks and sequenced as described previously (1). After removal of human and spiked-in sequences, short read sequences were aligned to whole-genome assemblies of *F. tularensis* and the closely related species *F. hispaniensis*. The mean BLAST percent nonidentity (100 - percent identity) and the number of reads aligned with at least 80% identity are shown for one assembly of *F. hispaniensis* and up to 3 assemblies of each subspecies of *F. tularensis* having the highest percent identity. Both measures strongly support the identification of *F. tularensis* at the species rank. In addition, these measures are consistent with *F. tularensis* subspecies *holarctica* (type B) over other subspecies, including *F. tularensis* subspecies *tularensis* (type A) and *F. tularensis* subspecies *novicida* (*F. novicida*).

species	subspecies	100% - mean BLAST % identity	mean BLAST % identity	BLAST aligned short reads	assembly accession
<i>Francisella tularensis</i>	<i>holarctica</i>	0.25	99.75	415	GCA_019134795.1
<i>Francisella tularensis</i>	<i>holarctica</i>	0.25	99.75	417	GCA_000011405.1
<i>Francisella tularensis</i>	<i>holarctica</i>	0.25	99.75	417	GCA_000014605.1
<i>Francisella tularensis</i>	<i>tularensis</i>	0.54	99.46	399	GCA_000305835.1
<i>Francisella tularensis</i>	<i>tularensis</i>	0.54	99.46	398	GCA_000305895.1
<i>Francisella tularensis</i>	<i>tularensis</i>	0.54	99.46	398	GCA_000305915.1
<i>Francisella tularensis</i>	<i>mediasiatica</i>	0.71	99.29	406	GCA_000018925.1
<i>Francisella tularensis</i>	<i>mediasiatica</i>	0.71	99.29	406	GCA_016604655.1
<i>Francisella tularensis</i>	<i>mediasiatica</i>	0.71	99.29	406	GCA_016604685.1
<i>Francisella tularensis</i>	<i>novicida</i>	1.45	98.55	382	GCA_001865695.1
<i>Francisella tularensis</i>	<i>novicida</i>	1.48	98.52	386	GCA_016604535.1
<i>Francisella tularensis</i>	<i>novicida</i>	1.49	98.51	377	GCA_016604325.1
<i>Francisella hispaniensis</i>		6.68	93.32	296	GCA_001885235.1

Reference

1. Blauwkamp TA, Thair S, Rosen MJ, Blair L, Lindner MS, Vilfan ID, et al. Analytical and clinical validation of a microbial cell-free DNA sequencing test for infectious disease. *Nat Microbiol.* 2019;4:663–74. [PubMed](https://doi.org/10.1038/s41564-018-0349-6) <https://doi.org/10.1038/s41564-018-0349-6>