Certificate of Analysis for NR-51620

Escherichia coli, Strain JJ1886

Catalog No. NR-51620

Product Description:

Escherichia coli (*E. coli*), strain JJ1886 was isolated in 2007 from a woman with fatal urosepsis in the United States. *E. coli*, strain JJ1886 was deposited as sensitive to trimethoprim/sulfamethoxazole, doxycycline, meropenem, nitrofurantoin and polymyxin B and resistant to ciprofloxacin and levofloxacin.

Lot: 70022776[1] **Manufacturing Date: 06FEB2019**

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-negative rods	Gram-negative rods
Colony morphology[2]	Report results	Circular, low convex, entire, smooth and cream (Figure 1)
Motility (wet mount)	Report results	Motile
VITEK® 2 (GN card)	*E. coli* (≥ 89%)	*E. coli* (98%)
VITEK® MS (MALDI-TOF)	*E. coli*	*E. coli* (99.9%)
Antibiotic Susceptibility Profile[3]		
VITEK® (AST-GN69 card)		
ESBL[4]	Report results	Positive
Ampicillin	Report results	Resistant (≥ 32 µg/mL)
Amoxicillin/Clavulanic Acid	Report results	Resistant (≥ 32 µg/mL)
Ampicillin/Sulbactam	Report results	Resistant (≥ 32 µg/mL)
Piperacillin/Tazobactam	Report results	Sensitive (8-16 µg/mL)
Cefazolin	Report results	Resistant (≥ 64 µg/mL)
Ceftazidime	Report results	Sensitive (4 µg/mL)[5]
Ceftriaxone	Report results	Resistant (≥ 64 µg/mL)
Cefepime	Report results	Sensitive (2 µg/mL)[6]
Ertapenem	Report results	Sensitive (≤ 0.5 µg/mL)
Imipenem	Report results	Sensitive (≤ 0.25 µg/mL)
Gentamicin	Report results	Sensitive (≤ 1µg/mL)
Tobramycin	Report results	Inconclusive[7]
Ciprofloxacin	Resistant	Resistant (≥ 4 µg/mL)
Levofloxacin	Resistant	Resistant (≥ 8 µg/mL)
Nitrofurantoin	Sensitive	Sensitive (≤ 16 µg/mL)
Trimethoprim/Sulfamethoxazole	Sensitive	Sensitive (≤ 20 µg/mL)
Etest® antibiotic test strips[8]		
Doxycycline	Sensitive	Sensitive (2 µg/mL)
Meropenem	Sensitive	Sensitive (0.023 µg/mL)
Polymyxin B	Sensitive	0.38 µg/mL[9]
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 1480 base pairs)	≥ 99% sequence identity with *E. coli,* strain JJ1886 (GenBank: CP006784.1)	99.8% sequence identity with *E. coli,* strain JJ1886 (GenBank: CP006784.1)[10]
Purity (post-freeze)[11,12]	Growth consistent with expected colony morphology	Growth consistent with expected colony morphology
Viability (post-freeze)[2]	Growth	Growth

[1]The deposited material was inoculated into Tryptic Soy broth, which was grown for 1 day at 37°C in an aerobic atmosphere and preserved in 10% glycerol. NR-51620 was produced by the inoculation of the preserved material into Tryptic Soy broth and grown for 1 day at 37°C in an aerobic atmosphere. Broth inoculum was added to Tryptic Soy agar kolles, which were grown for 1 day at 37°C in an aerobic atmosphere to produce this lot.

[2]1 day at 37°C in an aerobic atmosphere on Tryptic Soy agar

BEI Resources
www.beiresources.org
E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898

[3]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S28 (2018)
[4]The VITEK® 2 ESBL Test is a confirmatory test for Extended-Spectrum Beta-Lactamases (ESBLs) inhibited by clavulanic acid and utilizes cefepime, cefotaxime and ceftazidime, with and without clavulanic acid, to determine a positive or negative result.
[5]Because *E. coli*, strain JJ1886 is a confirmed ESBL-producer, CSLI recommendations are to modify the interpretation of ceftazidime based on the susceptibilities of other antibiotics in the same class, suggesting that this strain is resistant to ceftazidime.
[6]Because *E. coli*, strain JJ1886 is a confirmed ESBL-producer, CSLI recommendations are to modify the interpretation of cefepime based on the susceptibilities of other antibiotics in the same class, suggesting that this strain is resistant to cefepime.
[7]Antibiotic susceptibility testing performed in duplicate determined that for strain JJ1886, the tobramycin MICs are 8 µg/mL and 16 µg/mL, which are interpreted as intermediate and resistant, respectively.
[8]1 day at 37°C in an aerobic atmosphere on Mueller Hinton agar
[9] CLSI does not have published polymyxin B MIC breakpoints for *E. coli*. Isolates are defined only as wild type or non-wild type. For more information, please refer to Chew, K. L., et al. "Colistin and Polymyxin B Susceptibility Testing for Carbapenem-Resistant and *mcr*-Positive Enterobacteriaceae: Comparison of Sensititre, MicroScan, Vitek 2, and Etest with Broth Microdilution." J. Clin. Microbiol. 55 (2017): 2609-2616. PubMed: 28592552.
[10]Also consistent with *Shigella* and other *Escherichia* species
[11]Purity of this lot was assessed for 8 days at 37°C in an aerobic atmosphere with 5% CO_2 on Tryptic Soy agar.
[12]Purity of this lot was assessed for 8 days at 37°C in an aerobic atmosphere on Tryptic Soy agar.

Figure 1: Colony Morphology

/Heather Couch/
Heather Couch 20 SEP 2019
Program Manager or designee, ATCC Federal Solutions

ATCC®, on behalf of BEI Resources, hereby represents and warrants that the material provided under this certificate has been subjected to the tests and procedures specified and that the results described, along with any other data provided in this certificate, are true and accurate to the best of ATCC®'s knowledge.

Support Provided by NIAID

BEI Resources
www.beiresources.org
E-mail: contact@beiresources.org
Tel: 800-359-7370
Fax: 703-365-2898