b|e|i RESOURCES
SUPPORTING INFECTIOUS DISEASE RESEARCH

Certificate of Analysis for NR-19097

Streptococcus pneumoniae, Strain GA11856

Catalog No. NR-19097

Product Description: *Streptococcus pneumoniae* (*S. pneumoniae*), strain GA11856 was isolated in 2000 from the blood of a patient with bacteremia in Georgia, USA. *S. pneumoniae*, strain GA11856 was deposited as a member of serotype 19F.

Lot[1]: 62743336 **Manufacturing Date: 02JUL2014**

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-positive cocci	Gram-positive cocci
Colony morphology[2]	Report results	Circular, umbilicate, undulate and gray (Figure 1)
Hemolysis on blood agar[2]	α-hemolytic	α-hemolytic
Motility (wet mount)	Report results	Non-motile
Catalase	Negative	Negative
VITEK® 2 (GP Card)	Consistent with *S. pneumoniae*	Consistent with *S. pneumoniae*
Antibiotic Susceptibility Profile[3]		
Benzylpenicillin[4,5]	Sensitive	Inconclusive (1.5-4 µg/mL)[6]
Ciprofloxacin[5]	Report results	Sensitive (0.75 µg/mL)
Levofloxacin[4]	Sensitive	Sensitive (≤ 0.5 µg/mL)
Gatifloxacin[5]	Sensitive	Sensitive (0.19 µg/mL)
Ofloxacin[4]	Report results	Sensitive (≤ 1 µg/mL)
Erythromycin[4]	Resistant	Resistant (≥ 1 µg/mL)
Telithromycin[4]	Report results	Sensitive (≤ 0.25 µg/mL)
Clindamycin[5]	Resistant	Resistant (256 µg/mL)
Quinupristin/dalfopristin[5]	Report results	Sensitive (0.38 µg/mL)
Linezolid[4]	Report results	Sensitive (≤ 2 µg/mL)
Vancomycin[4]	Sensitive	Sensitive (≤ 1 µg/mL)
Tetracycline[4]	Sensitive	Resistant (≥ 16 µg/mL)[7]
Rifampicin[5]	Report results	Sensitive (0.047 µg/mL)
Trimethoprim/sulfamethoxazole[4]	Resistant	Resistant (160 µg/mL)
Amoxicillin[4]	Sensitive	Intermediate (4 µg/mL)[8]
Meropenem[4]	Intermediate	Intermediate (0.5 µg/mL)
Cefotaxime[4]	Sensitive	Inconclusive (1-2 µg/mL)[9]
Cefuroxine[5]	Resistant	Resistant (3 µg/mL)
Cefaclor[5]	Report results	Resistant (256 µg/mL)
Ceftriaxone[4]	Sensitive	Inconclusive[10]
Chloramphenicol[4]	Sensitive	Sensitive (4 µg/mL)
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 1450 base pairs)	Consistent with *S. pneumoniae*	Consistent with *S. pneumoniae*[11]
Riboprinter® Microbial Characterization System	Consistent with *S. pneumoniae*	Consistent with *S. pneumoniae*
Purity (post-freeze)[12]	Consistent with *S. pneumoniae*	Consistent with *S. pneumoniae*
Viability (post-freeze)[2]	Growth	Growth

[1] *S. pneumoniae*, strain GA11856 (also referred to as SPAR25) was deposited by Scott T. Chancey, Ph.D., Division of Infectious Diseases, Department of Medicine, Emory University, Atlanta, Georgia, USA. NR-19097 was produced by inoculation of the deposited material into Todd-Hewitt broth and incubated for 24 hours at 37°C in an aerobic atmosphere with 5% CO_2. Broth inoculum was added to Tryptic Soy agar with 5% defibrinated sheep blood kolles which were grown 24 hours at 37°C in an aerobic atmosphere with 5% CO_2 to produce this lot.

[2] 23 hours at 37°C in an aerobic atmosphere with 5% CO_2 on Tryptic Soy agar with 5% defibrinated sheep blood

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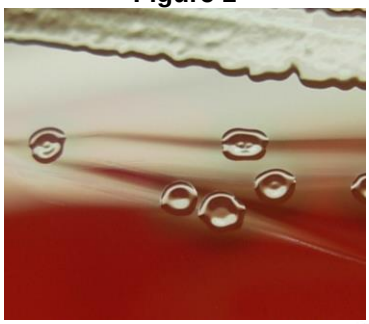
[3]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S22 (2012)
[4]Tested by VITEK® AST-GP74 card (VITEK® 2, version 5.04)
[5]Tested by bioMérieux E-test®: cefuroxime (catalog number 506958), ciprofloxacin (412310), clindamycin (412314), cefaclor (504550), benzylpenicillin (412264), gatifloxacin (530250), rifampicin (412449) and quinupristin/dalfopristin (528750)
[6]*S. pneumoniae*, strain GA11856 was deposited as sensitive to penicillin. Results from multiple antibiotic susceptibility tests, completed on this lot of NR-19097, produced benzylpenicillin MICs between 1.5 µg/mL and 4 µg/mL, which indicate both sensitive and intermediate penicillin susceptibilities.
[7]*S. pneumoniae*, strain GA11856 was deposited as sensitive to tetracycline. Antibiotic susceptibility testing performed on this lot of NR-19097, in triplicate, indicated that the tetracycline MIC is ≥ 16 µg/mL which indicates resistance.
[8]*S. pneumoniae*, strain GA11856 was deposited as sensitive to amoxicillin. Antibiotic susceptibility testing performed on this lot of NR-19097, in triplicate, determined that the amoxicillin MIC was 4 µg/mL, which indicates intermediate susceptibility.
[9]*S. pneumoniae*, strain GA11856 was deposited as being sensitive to cefotaxime. Results from multiple antibiotic susceptibility tests, completed on this lot of NR-19097, produced cefotaxime MICs between 1 µg/mL and 2 µg/mL, which indicates both sensitive and intermediate cefotaxime susceptibilities.
[10]*S. pneumoniae*, strain GA11856 was deposited as being sensitive to ceftriaxone. Results from multiple antibiotic susceptibility tests, completed on this lot of NR-19097, produced ceftriaxone MICs between 1 µg/mL and 4 µg/mL, which indicates both sensitive and resistant ceftriaxone susceptibilities.
[11]100% identical to *S. pneumoniae*, strain GA11856 (GenBank: AIJV01000012.1)
[12]Purity of this lot was assessed for 7 days on Tryptic Soy agar with 5% defibrinated sheep blood at 37°C in an aerobic atmosphere with 5% CO_2.

Figure 1



Date: 29 DEC 2014 **Signature:**

Title: Technical Manager, BEI Authentication or designee

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