Certificate of Analysis for NR-45901

Staphylococcus aureus, Strain HIP10540

Catalog No. NR-45901

Product Description: *Staphylococcus aureus* (*S. aureus*), strain HIP10540 was isolated in 2000 from a male in Ohio, USA. *S. aureus*, strain HIP10540 is a vancomycin-intermediate *S. aureus* (VISA) strain.

Lot[1]: 62990906 **Manufacturing Date: 09OCT2014**

TEST	SPECIFICATIONS	RESULTS
Phenotypic Analysis		
Cellular morphology	Gram-positive cocci	Gram-positive cocci
Colony morphology[2]	Report results	Circular, low convex, entire, smooth, opaque and gray (Figure 1)
Motility (wet mount)	Report results	Non-motile
Hemolysis[2]	Report results	β-hemolytic
Biochemical characterization:		
Catalase	Positive	Positive
Coagulase[3]	Report results	Negative
VITEK® 2 Compact (GP card)	Consistent with *S. aureus*	Consistent with *S. aureus*
Antibiotic Susceptibility Profile		
VITEK® (AST-GP71 card):[4]		
Beta-lactamase[5]	Report results	Positive
Cefoxitin screen	Report results	Positive
Benzylpenicillin	Report results	Resistant (= 0.5 µg/mL)
Oxacillin	Resistant	Resistant (≥ 4 µg/mL)
Gentamicin	Report results	Sensitive (= 1 µg/mL)[6]
Ciprofloxacin	Resistant	Resistant (≥ 8 µg/mL)
Levofloxacin	Report results	Resistant (≥ 8 µg/mL)
Moxifloxacin	Report results	Sensitive (= 2 µg/mL)
Clindamycin (inducible resistance)	Report results	Inconclusive[7]
Erythromycin	Sensitive	Sensitive (= 0.25 µg/mL)
Clindamycin	Sensitive	Sensitive (≤ 0.25 µg/mL)
Quinupristin/dalfopristin	Sensitive	Sensitive (≤ 0.25 µg/mL)
Linezolid	Sensitive	Sensitive (= 1 µg/mL)
Daptomycin	Report results	Sensitive (= 1 µg/mL)[8]
Vancomycin	Intermediate	Intermediate (= 4 µg/mL)
Minocycline	Report results	Sensitive (= 4 µg/mL)
Tetracycline	Report results	Resistant (≥ 16 µg/mL)
Tigecycline	Report results	Sensitive (≤ 0.12 µg/mL)
Nitrofurantoin	Report results	Sensitive (≤ 16 µg/mL)
Rifampicin	Report results	Resistant (≥ 32 µg/mL)
Trimethoprim/sulfamethoxazole	Resistant	Resistant (= 160 µg/mL)
Etest® antibiotic test strips:[9]		
Chloramphenicol[10]	Report results	Sensitive (= 2-3 µg/mL)
Teicoplanin[10]	Intermediate	Intermediate (= 12 µg/mL)
Genotypic Analysis		
Sequencing of 16S ribosomal RNA gene (~ 900 base pairs)	Consistent with *S. aureus*	Consistent with *S. aureus*
Purity (post-freeze)[11]	Growth consistent with *S. aureus*	Growth consistent with *S. aureus*
Viability (post-freeze)[2]	Growth	Growth

BEI Resources
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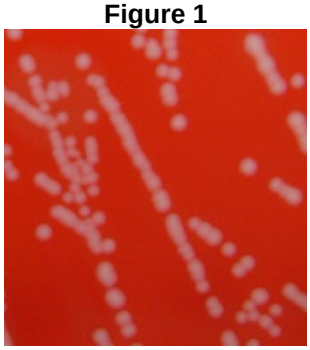
[1]*S. aureus*, strain HIP10540 was deposited to BEI Resources as part of the NARSA collection. NR-45901 was produced by inoculation of the deposited material into Tryptic Soy broth and grown 24 hours at 37°C in an aerobic atmosphere. Broth inoculum was added to Tryptic Soy agar with 5% defibrinated sheep blood kolles which were grown 26 hours at 37°C in an aerobic atmosphere to produce this lot.
[2]24 hours at 37°C in an aerobic atmosphere on Tryptic Soy agar with 5% defibrinated sheep blood
[3]24 hours at 37°C in rabbit serum with 0.15% EDTA (Coagulase Plasma BBL™ 240827)
[4]Minimum Inhibitory Concentration (MIC); MIC Interpretation Guideline: CLSI M100-S22 (2012)
[5]The production of beta-lactamase was detected using a Cefinase™ Paper Disc (BBL™ 231650).
[6]*S. aureus*, strain HIP10540 was deposited as resistant to gentamicin. Antibiotic susceptibility testing performed in duplicate identified *S. aureus*, strain HIP10540 as sensitive to gentamicin.
[7]The VITEK® AST-GP71 card tests for both clindamycin resistance and inducible clindamycin resistance (ICR). A positive ICR test is indicative of inducible MLS_B resistance, which confers resistance to macrolides, lincosamides, and type B streptogramin and the isolate should be considered resistant to clindamycin. Antibiotic susceptibility testing performed in duplicate was inconclusive and could not confirm if this strain has an ICR phenotype.
[8]*S. aureus*, strain HIP10540 was deposited as non-susceptible to daptomycin. Antibiotic susceptibility testing performed in duplicate identified *S. aureus*, strain HIP10540 as susceptible to daptomycin.
[9]24 hours at 37°C in an aerobic atmosphere on Mueller Hinton agar
[10]For both chloramphenicol (bioMérieux Etest® 412308) and teicoplanin (bioMérieux Etest® 412459), a MIC ≤ 8 µg/mL is sensitive, a MIC = 16 µg/mL is intermediate and a MIC ≥ 32 µg/mL is resistant.
[11]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.

Figure 1



Date: 04 DEC 2014 **Signature:**

Title: Technical Manager, BEI Authentication or designee

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.

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