ResistantPath Report

12076 Technology Avenue • Alachua, FL 32615, USA
Phone: 352.375.5553 Fax: 352-505-5506
CLIA# 10D2042485

NCF | Diagnostics & DNA Technologies

Patient Information

Patient Name:
DOB:
Gender: Female
Race: Asian
Ethnicity: Not Hispanic or Latino
Ordered By: MD
Lab Director: Marc Zumberg, M.D.
Clinical Molecular Pathology Supervisor: Ayyamperumal Jeyaprakash Ph.D, TS (ABB), MB (ASCP)

Accession#:
Collection Date: 6/30/2017
Received Date: 7/5/2017
Report Date: 7/5/2017
Sample Type: Wound Swab (Left Leg)
Additional Comments: Sample arrived in good condition.

Ayyamperumal Jeyaprakash, Ph.D.

Antibiotic Resistance Overview

The emergence of antibiotic resistance has led to the discovery of specific associated genetic mutations within a pathogen that allows it to resist the effects of a medication. Pathogens can acquire these antibiotic resistance genes from other pathogens via mobile genetic elements. NCF Diagnostics utilizes the most advanced technology to identify the commonly associated "resistant" genes in an effort to help guide providers in choosing the most appropriate and effective therapy to eradicate the identified pathogen.

Gene	Detection	Clinical Relevance
mecA Gene	**Positive Detection**	**Increased Risk of Antibiotic Resistance to Beta-lactams**
mecC Gene	Negative Detection	Decreased Risk of Antibiotic Resistance to Beta-lactams
blaSHV-5 Gene	Negative Detection	Decreased Risk of Antibiotic Resistance to Beta-lactams
mcr-1 Gene	Negative Detection	Decreased Risk of Antibiotic Resistance to Polymixins
1546 Transposon	Negative Detection	Decreased Risk of Antibiotic Resistance to Quinolones
grlA Gene	Negative Detection	Decreased Risk of Antibiotic Resistance to Quinolones
VanA Gene	**Positive Detection**	**Increased Risk of Antibiotic Resistance to Vancomycin**
VanB Gene	Negative Detection	Decreased Risk of Antibiotic Resistance to Vancomycin
Cfr23S Gene	Negative Detection	Decreased Risk of Antibiotic Resistance to Macrolides
ampC Gene	Negative Detection	Decreased Risk of Ampicillin and Cephalosporin Resistance
ermB Gene	**Positive Detection**	**Increased Risk of Erythromycin Resistance**
tetM Gene	**Positive Detection**	**Increased Risk of Tetracycline Resistance**
tetS Gene	Negative Detection	Decreased Risk of Tetracycline Resistance

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Disclaimer

Thank you for choosing NCFDNA as your lab partner. This test was developed and its performance characteristics determined by NCF Diagnostics & DNA Technologies. It has not been cleared or approved by the FDA. The laboratory is regulated under CLIA and CAP as qualified to perform high-complexity testing. All testing has been validated according to those standards. This test is used for clinical purposes. It should not be regarded as investigational or for research.

Please note the following information provided on the listed medications has been compiled from current guidelines generated from sensitivity and susceptibly testing performed by these resources and not NCFDNA. These resources have determined the ability to eradicate each pathogen in the presence of the FDA approved recommended dosage of the correlating antibiotic listed. Based off of these studies and guidelines, NCF has compiled the information and placed it into a chart as a resource. It is not intended to be used as medical advice or in substitution for consultation with infectious disease experts. The ordering physician is responsible for the treatment plan for each patient.

Legend for Antibiotic Chart

A = ACTIVE LA = LESS ACTIVE R = RESISTANT

If the referenced resource has listed the antibiotic to be a first-line antibiotic in treating the detected pathogen, it will be listed in correlation with "A" reflecting the antibiotic should have the ACTIVE ability to eradicate the pathogen in the type of specimen provided when used according to the FDA approved dosing guidelines.

If the referenced resource has listed the antibiotic to be a second-line antibiotic in treating the detected pathogen, it will be listed in correlation with "LA" reflecting the antibiotic is still indicated but may be LESS ACTIVE in eradicating the pathogen in the type of specimen provided when used according to the FDA approved dosing guidelines.

If the documented resources have determined the antibiotic to either be INEFFECTIVE or it is NOT INDICATED in eradicating the detected pathogen in the type of specimen provided, it will be listed in correlation with a WHITE box.

The resistance testing results are incorporated into this resource table for convenience and illustration. If a resistance gene is detected by NCFDNA testing, the prior determination will be replaced with "R" demonstrating that NCF has detected a gene that may cause resistance to the listed medication. There may be other causes for antibiotic resistance that are not tested. This report only reflects results of the specific genes being tested by NCFDNA.

Methodology

Methodology:
DNA/RNA Extractions from pathogens are followed by Reverse Transcriptase Polymerase Chain Reaction (RT-PCR), TaqMan qPCR and Sanger Sequencing assays to yield clinical significance at analytical sensitivity and specificity 99%.

Advantages:
Genetic testing for identification of antimicrobial resistance has the potential to provide a more rapid and accurate assessment than conventional susceptibility methods. Genetic antimicrobial resistance testing can be performed on clinical specimens without needing to isolate the specimen by culture. Genetic testing accesses the genotype rather than the expression of the genotype (phenotype).

Disadvantages or Limitations:
Resistance of a microorganism to a specific antimicrobial agent may occur via different mechanisms that are not reported through our technology. Rare false positive and false negative results may occur.

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A = ACTIVE LA = LESS ACTIVE R = RESISTANT

Patient Name: Ajmani, Alka DOB:02-12-1966

Medication	E. Coli (Skin)	Klebsiella spp. (Skin)	Pseudomonas aeruginosa (Skin)	Methicillin-Resistant Staph. aureus (Skin)
Terbinafine/Naftifine/Butenafine (PO/Topical)				
Nystatin/Miconazole/Clotrimazole/Econazole (Topical)				
Clotrimazole (Troche/Intravaginal/Topical)				
Fluconazole/Itraconazole (PO/IV)				
Voriconazole/Posaconazole (PO)				
Griseofulvin (PO)				
Amphoteracin B (IV)				
Cefazolin (IM/IV)	**R**	**R**	**R**	**R**
Cefdinir (PO)	**R**	**R**	**R**	**R**
Cefepime (IM/IV)	**R**	**R**	**R**	**R**
Cefotetan (IM/IV)	**R**	**R**	**R**	**R**
Cefoxitin (IV)	**R**	**R**	**R**	**R**
Cefpodoxime (PO)	**R**	**R**	**R**	**R**
Cefotaxime (IM/IV)	**R**	**R**	**R**	**R**
Ceftaroline (IV)	**R**	**R**	**R**	**R**
Ceftazidime (IM/IV)	**R**	**R**	**R**	**R**
Ceftolozane/Tazobactam (IV)	**R**	**R**	**R**	**R**
Ceftriaxone (PO/IV)	**R**	**R**	**R**	**R**
Cephalexin (PO)	**R**	**R**	**R**	**R**
Cefuroxime (PO/IV)	**R**	**R**	**R**	**R**
Ampicillin/Sulbactam (IM/IV)	**R**	**R**	**R**	**R**
Ampicillin (IM/IV)	**R**	**R**	**R**	**R**
Amoxicillin (PO)	**R**	**R**	**R**	**R**
Amoxicillin/Clavulanate (PO)	**R**	**R**	**R**	**R**
Dicloxacillin (PO)	**R**	**R**	**R**	**R**
Oxacillin/Nafcillin (IM/IV)	**R**	**R**	**R**	**R**
Penicillin V (PO)	**R**	**R**	**R**	**R**
Penicillin G (IV)	**R**	**R**	**R**	**R**
Piperacillin/Tazobactam (IV)	**R**	**R**	**R**	**R**
Ertapenem (IM/IV)	**R**	**R**	**R**	**R**
Imipenem (IM/IV)	**R**	**R**	**R**	**R**
Meropenem (IV)	**R**	**R**	**R**	**R**
Vancomycin (PO/IV)	**R**	**R**	**R**	**R**
Daptomycin (IV)				A(1)
Clindamycin (PO/IM/IV)				A(1)
Azithromycin (PO)				
Clarithromycin (PO/IV)				
Erythromycin (PO/IV)	**R**	**R**	**R**	**R**
Josamycin (PO)				
Aztreonam (IM/IV)	**R**	**R**	**R**	**R**
Metronidazole (PO/IV)				
Quinupristin/Dalfopristin (IV)				
Nitrofurantoin (PO/IV)				
Chloramphenicol (PO/IV/OPHTH)				
Linezolid (PO/IV)				A(1)
Fosfomycin (PO)				
Colistin (Inh/IM/IV)		A(1)	A(1)	
Polymyxin B (IT/IV)				
Ciprofloxacin (PO/IV)	A(1)	A(1)	A(1)	
Levofloxacin/Moxifloxacin (PO/IV)	A(1)	A(1)	A(1)	
Trimethoprim/Sulfamethoxazole (PO/IV)	A(1)	A(1)		A(1)
Amikacin (IM/IV)				
Gent/Tobra/Amikacin (IM/IV)	A(1)	A(1)	A(1)	
Paromomycin (PO/IM) & Strepto (IM/IV) & Tobra (IV)				
Doxycycline (PO/IV)	**R**	**R**	**R**	**R**
Tetracycline (PO/IV)	**R**	**R**	**R**	**R**
Tigecycline (IV)				
Oritavancin (IV)				A(1)
Telavancin (IV)				

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