



MICROGEN DIAGNOSTICS
 2002 W LOOP 289, SUITE 116 | LUBBOCK, TX 79407
 FAX: 1 - 407 - 204 - 1401 | PHONE: 1 - 855 - 208 - 0019

PATIENT	PATIENT NAME	SPECIMEN	BILATERAL TOENAILS	PHYSICIAN	Rivera, Jose
DOB	MM/DD/YYYY	RECEIVED	MM/DD/YYYY	PHONE	(###)###-####
PATIENT ID	PATIENT ID	COMPLETED	MM/DD/YYYY	FAX	(###)###-####
GENDER	Male	ACCESSION	ACCESSION #	COLLECTED	MM/DD/YYYY

RESISTANCE GENES DETECTED
 Methicillin

<p>LEVEL 2 NGS REPORT</p> <p>COMPREHENSIVE IDENTIFICATION NEXT-GEN DNA SEQUENCING RESULTS with PRIOR PCR RESULTS.</p>				ANTIMICROBIAL RECOMMENDATION													
				Gram Stain	Respiration	Glycopeptides e.g. Vancomycin	Linezolid (Zyvox)	Cephalosporins First Gen e.g. Keflex	Carbapenems e.g. Merrem	Antifolates e.g. Bactrim	Fluoroquinolones e.g. Levofloxacin	Tetracyclines e.g. Doxycycline	Macrolides e.g. Erythromycin	Lipopeptides e.g. Cubicin	Clindamycin	Cephalosporins Fourth Gen e.g. Maxipime	Quinolones e.g. Cipro
COMPLETE (NGS & PCR RESULTS)	DNA copies per g	NGS															
BACTERIAL LOAD	Medium	10 ⁵ -10 ⁷	%														
Staphylococcus capitis	NGS	37%	+	FAn	√	√	√	√	√	√							
Corynebacterium tuberculostearicum	NGS	22%	+	FAn	√	√				√	√	√					
Staphylococcus lugdunensis	NGS	14%	+	FAn	√	√	√	√	√	√		√					
Brevibacterium paucivorans	NGS	5%	+	Ae	√		√				√		√	√	√		
Helcobacillus massiliensis	NGS	3%															
Corynebacterium afermentans	NGS	3%	+	FAn	√	√		√		√	√	√					
Kocuria rhizophila	NGS	2%	+	Ae	√	√				√	√		√	√	√	√	√
Corynebacterium jeikeium	NGS	2%	+	FAn	√	√				√		√					
Staphylococcus piscifermentans	NGS	2%	+	FAn	√	√											

LAB REPORT KEY			
DNA copies per g: [NGS] = Detected by Next-Gen Seq. Only Bacterial Load: < 10 ⁵ = LOW 10 ⁵ to 10 ⁷ = MED > 10 ⁷ = HIGH	Gram Stain: [+] = Positive [-] = Negative [V] = Variable [N] = Not Applicable [U] = Unknown	Respiration: [Ae] = Aerobic [An] = Anaerobic [Fan] = Facultative anaerobic [Unk] = Unknown	Antimicrobial: [V] = Proven to be effective. [R] = Resistance genes detected. [] = Empty Fields denote Unknown. [PO] = Available in Oral formulations. [IV] = Intravenous; [TP] = Topical.



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qPCR TESTS FOR THE FOLLOWING BACTERIA			FUNGI	STIs	RESISTANCE GENES	
Enterococcus faecalis Enterococcus faecium	Streptococcus agalactiae Pseudomonas aeruginosa	Streptococcus pyogenes Staphylococcus aureus	Candida albicans Trichophyton rubrum	None	Vancomycin Beta-lactam Tetracycline Macrolide	Methicillin Aminoglycoside Carbapenem Quinolone

Next Generation Sequencing Results

MicroGen Diagnostics' comprehensive testing (patent pending) is a relative quantitative universal test for bacteria/fungi. DNA sequencing methods are used to identify the microorganisms' genetic signatures and the estimated percentage of organisms present in the specimen. Virtually all bacteria/fungi are screened for and the most predominant populations are reported.

ANTIBIOTIC CLASSES AND MOST-COMMONLY USED EXAMPLES			
CLASS	GENERIC formulations	CLASS	GENERIC formulations
Allylamines	Amorolfine; Naftifine	Flucytosine	5-fluorocytosine (Ancobon)
Aminoglycosides	Gentamycin; Tobramycin	Fluoroquinolones	Norfloxacin(PO); Levofloxacin; Oxofloxacin(PO)
Aminoglycosides+Aminopenicillins	Ampicillin/Gentamicin	Glycopeptides	Vancomycin; Teicoplanin
Aminopenicillins	Amoxicillin; Ampicillin(PO)	Imidazoles	Ketoconazole(PO); Clotrimazole; Oxiconazole
Antifolates	TMP/SMX	Lipopeptides	Daptomycin
Anti-Pseudomonal Penicillins	Piperacillin; Nafcillin	Macrolides	Erythromycin; Azithromycin(PO)
Anti-Pseudomonal penicillins/Beta-lactamase inhibitors	Piperacillin/Tazobactam	Naphthyridones	Nalidixic acid
Anti-tuberculosis	Isoniazid; Rifampin; Streptomycin	Oxacephems	Moxalactam
Aztreonam	Azactam	Penicillins	Penicillin G; Penicillin V(PO)
Carbapenems	Cilistatin/Imipenem; Meropenem	Polyenes	Natamycin; Amphotericin B
Cephalosporins First Gen	Cephalexin(PO); Cefazolin	Polyenes+Flucytosine	Amphotericin B/5-fluorocytosine
Cephalosporins Fourth Gen	Cefepime	Quinolones	Ciprofloxacin (PO); Levofloxacin; Moxifloxacin(PO)
Cephalosporins Second Gen	Cefprozil; Cefotetan	Tetracyclines	Doxycycline(PO); Minocycline
Cephalosporins Third Gen	Cefixime; Cefdinir; Ceftazidime	Triazoles	Fluconazole(PO); Terconazole
Cephameycins	Cefoxitin	Triazoles+Echinocandins	Voriconazole/Anidulafungin
Echinocandins	Caspofugin; Micafungin		
Extended spectrum penicillins / Beta-lactamase inhibitors	Amoxicillin / Clavulanate(PO); Ampicillin / Sulbactam		

Complete Antibiotic Analysis

ANTIBIOTIC DISCLAIMER: Southwest Regional PCR, DBA MicroGen Diagnostics, LLC assumes no liability to patients with respect to the actions of physicians, health care facilities and other users, and is not responsible for any injury, death or damage resulting from the use, misuse or interpretation of information obtained through this antibiotic report. Therapeutic options listed by the program are based upon national antibiotic susceptibility data and antibiograms. Therapy should not be undertaken without a thorough assessment of the indications, contraindications and side effects of any prospective drug or intervention. Furthermore, the database is curated and derived from incidence and prevalence statistics whose accuracy will vary widely for individual diseases and regions of the country. Changes in endemicity, incidence, and drugs of choice may occur. The list of drugs, infectious diseases and even country names will vary with time. Although we endeavor to include such new information on a timely basis, a delay cannot be avoided. For more information please contact us at 855-208-0019.

DISCLAIMER: (i) This test was developed and performance characteristics have been determined by Southwest Regional PCR Laboratory dba MicroGen DX. It has not been cleared or approved by the U.S. Food and Drug Administration (FDA), however, the FDA has determined that such clearance or approval is not necessary. This test is used for clinical purposes. Its use should not be regarded as investigational or for research. This laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA 88) as qualified to perform high complexity clinical laboratory testing. (ii) A negative result does not rule out the presence of PCR inhibitors, or DNA extraction inhibitors such as lidocaine, in patients' specimens or microbial DNA concentrations below the level of detection of the assay. (iii) This test is performed pursuant to an agreement with Roche Molecular Systems, Inc. (iv) Relative quantitation of swabs refers to analyte load levels of $< 10^5$, 10^5 to 10^7 , and $> 10^7$ for low, medium and high respectively.

ANTIBIOTIC ANALYSIS

This antimicrobial recommendation sheet is not based on antibiotic sensitivities but is based on antimicrobial reference guides such as the John Hopkins ABX Guide.