

Patient Name:	Health Status: Skin lesions on tail	Account #:
Owner's Name:	Ordered by:	Sample ID: MI50000539
Breed: Bearded dragon	Email:	Sample Type: Skin
Age:	Hospital:	Received Date: 12/7/2021
Species: Reptile	Location:	Report Date: 12/10/21

Potential Clinically Relevant Microbes Detected:

Listed are those bacteria and fungi detected in the specimen that are of potential clinical relevance. Results from this report should be considered together with additional clinical data gathered by the veterinarian (physical examination, medical history, cytology, etc.) as the microbes detected may or may not be the cause of the clinical condition. For a comprehensive list of all microorganisms detected in this specimen see page 3 of this report.

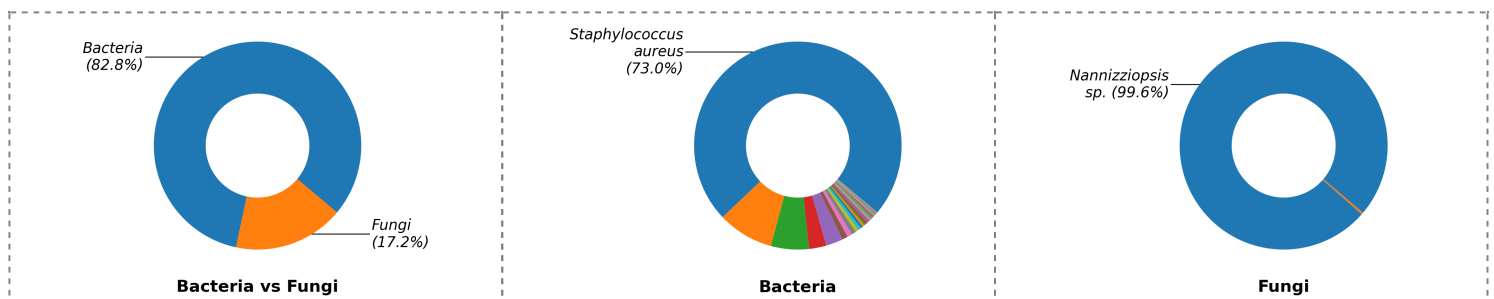
1. Bacteria

Species Detected	Percentage (%)	Cells per Sample
Staphylococcus aureus [1]	73.03	29,000,000
Enterobacter cloacae [2]	8.71	3,500,000
Staphylococcus pasteurii-warneri [3][4][5]	5.91	2,400,000
Staphylococcus simulans [3][4][5]	2.68	1,100,000
Staphylococcus sciuri [1][6]	2.63	1,100,000

2. Fungi

Species Detected	Percentage (%)	Cells per Sample
Nannizziopsis sp. [7][8][9]	99.59	250,000
Rhizopus delemar [8][9][10]	0.07	180
Mucor circinelloides [8][9][10]	0.06	170

Microbial Overview:



Bacteria vs Fungi: the relative abundance between Bacteria and Fungi. **Bacteria:** the percentage profile of bacterial species alone. **Fungi:** the percentage profile of fungi species alone. Each color represents a species. The larger the colored segment is, the more abundant the species is.

Antibiotic Resistance for Detected Clinically Relevant Microbes

The sample was screened for the presence of antibiotic resistance genes and intrinsic resistances of clinically relevant microorganisms. For this analysis more than 90 antibiotic resistance genes were screened. The cautious use of any antibiotic drug is highly recommended. Please follow the guidelines for antimicrobial stewardship in veterinary practice.

Drug Tiers*	Antibiotics	<i>Staphylococcus aureus</i> (73.0 %)	<i>Enterobacter cloacae</i> (8.7 %)	<i>Staphylococcus pasteurii-warneri</i> (5.9 %)	<i>Staphylococcus simulans</i> (2.7 %)	<i>Staphylococcus sciuri</i> (2.6 %)	Suggested Dose†	Drug Delivery	
1st	Cefazolin	NR	NR				15 mg/kg, q 12 hrs	IV, SC	
	Cephalothin	NR	NR				4-20 mg/kg, q 8 hrs	PO	
	Cephalexin	NR	NR				22 mg/kg, q 12 hrs	PO	
	Cefadroxil	NR	NR				22 mg/kg, q 12 hrs	PO	
	Cefoxitin	NR	NR				15 mg/kg, q 12 hrs	IV, SC	
	Penicillin	NR	NR	NR	NR		8-10 mg/kg, q 8 hrs	PO	
	Penicillin G	NR	NR	NR	NR		--	--	
	Oxacillin	NR	NR	NR	NR		22 mg/kg, q 8 hrs	IV	
	Ampicillin	NR	NR	NR	NR		22 mg/kg, q 8 hrs	IV, SC	
	Amoxicillin	NR	NR	NR	NR		22 mg/kg, q 8 hrs	PO	
	Clavamox	NR	NR				13.75 mg/kg, q 12 hrs	PO	
	Gentamicin	NR	NR	NR			6 mg/kg, q 24 hrs	IV, SC	
	Tobramycin	NR	NR	NR			--	IV/Topical Use	
	Neomycin	NR	NR	NR			--	Topical Use	
	Clindamycin	NR	NR	NR	NR		5.5 mg/kg, q 12 hrs	PO	
	Lincomycin	NR	NR	NR	NR		15-25 mg/kg, q 24hrs	PO	
	Doxycycline	NR	G	NR	NR		5 mg/kg, q 12 hrs	PO	
	Minocycline	NR	F	NR	NR		10 mg/kg, q 12 hrs	PO	
	Tetracycline	NR	F	NR	NR		20 mg/kg, q 12 hrs	PO	
	2nd	Sulfonamide		NR				30 mg/kg, q 12 hrs	PO
Trimethoprim-Sulfamethoxazole		G	NR				15-30 mg/kg, q 24 hrs	PO	
Metronidazole		NR	NR				10 mg/kg, q 8 hrs	IV	
Cefovecin		NR	NR				8 mg/kg, once	SC	
Cefpodoxime		NR	F				5 mg/kg, q 24 hrs	PO	
Ceftiofur		NR	NR				2.2 mg/kg, q 24 hrs	SC	
Timentin		NR	F				--	Topical Use	
Azithromycin		NR	NR	NR	NR		5 mg/kg q 12 hrs	PO	
Orbifloxacin		F	F				2.5-7.5 mg/kg, q 24 hrs	PO	
Chloramphenicol		NR	G	NR			35 mg/kg q 8 hrs	PO	
Florfenicol		NR	F	NR			20 mg/kg, q 12 hrs	PO	
3rd		Amikacin	NR	NR	NR			15 mg/kg, q 24 hrs	IV, SC
		Rifampin	G	NR				5-10 mg/kg, q 12 hrs	PO
		Imipenem	NR	G				10 or 20 mg/kg, q 8 hrs	--
		Levofloxacin	F	G				10-30 mg/kg, q 24 hrs	IV/PO
	Marbofloxacin	G	G				2.75-5.5 mg/kg, q 24 hrs	PO	
	Pradofloxacin§	F	F				3.0 mg/kg, q 24 hrs	PO	
	Enrofloxacin	G	G				5 mg/kg, q 24 hrs	PO	
	Ciprofloxacin¶	F	G				--	Topical Use	
	Ceftazidime	NR	NR				3-30 mg/kg, q 6-8 hrs	IV	
	Mupirocin	NR	NR				--	Topical Use	
	Nitrofurantoin	F	F				4.4-5mg/kg, q 24 hrs	PO	
	Colistin	NR	F				8-9g/kg, q 24 hrs	PO	
Ticarcillin	NR	NR	NR	NR		3.1 g, q 4-6 hrs	IV		
Piperacillin-Tazobactam	NR	F				90 mg/kg, 30min q 8 hrs	IV		

This table lists antibiotic sensitivities/resistances for the indicated bacteria based on detection of specific antibiotic resistance genes and naturally occurring, or intrinsic, resistance to specific antibiotics previously identified for that organism. To receive a list of the antibiotic resistance genes detected as well as intrinsic resistances for additional organisms not listed here, please contact MiDOG® customer support.

Abbreviation Keys:

NR	Not Recommended (Due to either Resistance Genes Detected, Intrinsic Resistance, or < 10% Effectiveness in Antibiogram Studies)
P	Poor Performance (< 50% Effectiveness in Antibiogram Studies)
F	Fair Performance (< 75% Effectiveness in Antibiogram Studies)
G	Good Performance (> 75% Effectiveness in Antibiogram Studies)
	No Relevant Info Available

PO	Oral, by mouth
IV	Intravenous Injection
SC	Subcutaneous Injection
TU	Topical Use
--	No Info

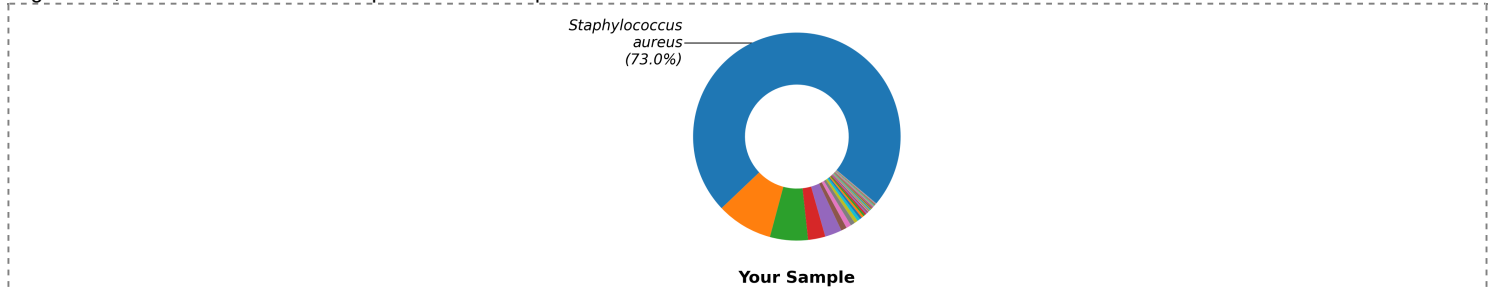
Symbols:

*	Reference: Antimicrobial Resistance and Stewardship Initiative University of Minnesota, Antibiotic Drug Tiers and Selection List for Companion Animals.
†	Dosis may vary based on patient species and/or type of infection. Reference at: www.midogtest.com/antibiotics .
§	Variable bioavailability in canine patients.
¶	Contraindicated in canine patients.

Supplemental Data

Total Bacteria Composition

Charts below depict the relative abundance of all detected bacterial species. Each color represents a different bacterial species. The larger the colored segment is, the more abundant that species is in the specimen.

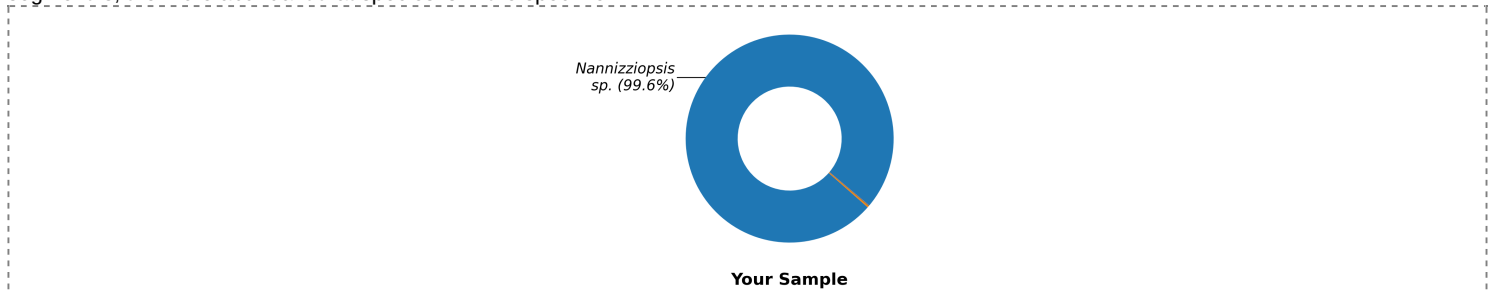


The table below lists top 8 bacterial species detected within the limit of detection. The absolute and relative abundances of each species is shown.

Species Detected	Percentage (%)	Cells per Sample
Staphylococcus aureus [1]	73.03	29,000,000
Enterobacter cloacae [2]	8.71	3,500,000
Staphylococcus pasteurii-warneri [3][4][5]	5.91	2,400,000
Staphylococcus simulans [3][4][5]	2.68	1,100,000
Staphylococcus sciuri [1][6]	2.63	1,100,000
Moraxella osloensis	0.89	360,000
Staphylococcus saprophyticus [3][4][5]	0.77	310,000
Serratia marcescens [8][9][11]	0.7	280,000

Total Fungal Composition

Charts below depict the relative abundance of all detected fungal species. Each color represents a different fungal species. The larger the colored segment is, the more abundant that species is in the specimen.



The table below lists top 8 bacterial species detected within the limit of detection. The absolute and relative abundances of each species is shown.

Species Detected	Percentage (%)	Cells per Sample
Nannizziopsis sp. [7][8][9]	99.59	250,000
(f)Aspergillaceae sp.	0.23	600
Rhizopus delemar [8][9][10]	0.07	180
Mucor circinelloides [8][9][10]	0.06	170
Penicillium sp.	0.02	62

References

1. Ehrlich G. D., Hu F. Z., Sotereanos N., Sewicke J., Parvizi J., Nara P.L., Arciola, C. R. What role do periodontal pathogens play in osteoarthritis and periprosthetic joint infections of the knee. (2014) *J Appl Biomater Funct Mater* 12(1): 13-20
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7. Nourrisson, C., Vidal-Roux, M., Cayot, S., Jacomet, C., Bothorel, C., Ledoux-Pilon, A., ... & Poirier, P. (2018). Invasive Infections Caused by *Nannizziopsis* spp. Molds in Immunocompromised Patients. *Emerging infectious diseases*, 24(3), 549.
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10. Ballard, Bonnie, and Ryan Cheek, eds. *Exotic animal medicine for the veterinary technician*. John Wiley & Sons, 2016.
11. Wilkins R.J. *Serratia marcescens* septicaemia in the dog. *J Small Anim Pract*. 1973 Apr;14(4):205-15.

Methods

The MiDOG® All-in-One Microbial Test is a targeted, Next-generation DNA sequencing testing service able to identify molecular signatures unique to the identity and character of a specific microorganism. This test relies on safeguarded preservation and transport of collected samples, thorough extraction of DNA from all microbes present in the specimen, select amplification of microbial DNA followed by Next-generation DNA sequencing using the latest technologies from Illumina (Illumina, Inc., San Diego, CA). Data handling is done via curated microbial databases to accurately align DNA sequences to ensure precise and accurate (species-level) identification of all bacteria and fungi present in the specimen.

When no Bacterial or Fungal Species are Detected:

When no bacterial or fungal species are detected in this test, this result may be due to a very low microbial load and/or low concentration of microbial DNA in the sample provided. In this case, we recommend re-sampling the area of interest and re-submitting specimen for analysis.

Disclaimer

The information contained in this MiDOG® report is intended only to be factor for use in a diagnosis and treatment regime for the canine patient. As with any diagnosis or treatment regime, you should use clinical discretion with each canine patient based on a complete evaluation of the canine patient, including history, physical presentation and complete laboratory data, including confirmatory tests. All test results should be evaluated in the context of the patients individual clinical presentation. The information in the MiDOG® report has not been evaluated by the FDA.

Customer Support

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