

New panel for Rapid Identification of Bacteria and Yeast from positive blood culture

WHAT'S NEW?

Effective November 28, 2016, PeaceHealth Laboratories will perform a new test to aid in the rapid identification of 24 blood pathogens from positive blood cultures. This new multiplex molecular diagnostic assay is the FilmArray Blood Culture Identification panel from BioFire Diagnostics.

WHY THE CHANGE?

The Blood Culture Identification panel can significantly reduce the time required to report results from positive blood cultures in cases of bacteremia and sepsis. Rapid identification of blood pathogens, when used in conjunction with sepsis and antibiotic stewardship best practices, has been demonstrated to reduce the time to appropriate pharmacotherapy.

The panel identifies 24 pathogens: 19 gram-positive and gram-negative bacteria and 5 species of *Candida* yeast directly from a positive blood culture. Test results are now available within two hours of the detection of a positive blood culture from the conventional blood bottle culture instrument.

Please note that while the Blood Culture Identification panel does detect 3 genetic determinants of antimicrobial resistance, this new test does not include susceptibility data. Susceptibility testing will be performed on microorganisms isolated from positive blood cultures using conventional methods.

TEST NOTES

The Blood Culture Identification panel does not detect all microorganisms that may grow in a blood culture. All blood cultures will continue to be cultured using conventional methods.

The Blood Culture Identification panel identifies some bacteria to the species level (*Staphylococcus aureus*) and others to the Genus or Family level (Staphylococcus). Bacteria needing speciation will be tested further using conventional methods.

When the pathogen is “not detected” using the Blood Culture Identification panel test, the blood will be cultured by traditional methods and results will be reported after 18–24 hours. A result of “not detected” may not necessarily mean that the blood culture is “negative.”

The Blood Culture Identification panel is now part of the laboratory blood culture testing protocol and clinicians will not be required to order this test.

The laboratory will continue to immediately perform and report a direct Gram stain from a positive blood culture. The laboratory will automatically perform the Blood Culture Identification test on a positive blood culture bottle from a non-expired patient, regardless of whether organisms are seen in the direct Gram stain, with these exceptions:

- When a patient has multiple positive bottles of the same microorganism type, the laboratory will test only 1 of the bottles.
- When the direct Gram stain morphology indicates that the probable organism in a positive blood culture is not included in the Blood Culture Identification test coverage (primarily some gram positive bacilli), the Blood Culture Identification test will not be performed.

TURNAROUND TIME

The Blood Culture Identification panel results will be available within two hours of the detection of a positive blood culture from the conventional blood bottle instrument during day and swing shifts at all locations. Whenever possible, results will also be reported during the night shift.

QUESTIONS:

Denise Jones, Microbiology Manager, Vancouver Laboratory, 360-514-3838

Crystal Hansen, Ketchikan Laboratory Manager 907-228-8300 ext. 7337

Richard Ferguson, Bellingham Supervisor, Microbiology, 360-788-6330 ext. 2967

Alice Knee, Longview Microbiology, 360-636-4868

Gary Flom, Technical Specialist, Springfield Microbiology, 541-687-2134 ext. 8004

Robert Liao, PhD, Director, Microbiology, Serology and Molecular Diagnostics, 800-826-3616 ext. 4798

The FilmArray BCID panel simultaneously tests for the following:

Gram-Positive Bacteria	Gram-Negative Bacteria	Yeast	Antimicrobial Resistance Genes
<i>Enterococcus</i>	<i>Acinetobacter baumannii</i>	<i>Candida albicans</i>	<i>mecA</i> - methicillin resistance
<i>Listeria monocytogenes</i>	<i>Haemophilus influenzae</i>	<i>Candida glabrata</i>	<i>vanA/B</i> - vancomycin resistance
<i>Staphylococcus</i>	<i>Neisseria meningitidis</i>	<i>Candida krusei</i>	KPC - carbapenem resistance
<i>Staphylococcus aureus</i>	<i>Pseudomonas aeruginosa</i>	<i>Candida parapsilosis</i>	
<i>Streptococcus</i>	<i>Enterobacteriaceae</i>	<i>Candida tropicalis</i>	
<i>Streptococcus agalactiae</i>	<i>Enterobacter cloacae</i> complex		
<i>Streptococcus pneumoniae</i>	<i>Escherichia coli</i>		
<i>Streptococcus pyogenes</i>	<i>Klebsiella oxytoca</i>		
	<i>Klebsiella pneumoniae</i>		
	<i>Proteus</i>		
	<i>Serratia marcescens</i>		

REPORT EXAMPLE

FilmArray Blood Culture Panel (Preliminary result)

Component	Result	Ref. Range	Units
Enterococcus	Not detected	Not detected	
Listeria monocytogenes	Not detected	Not detected	
Staphylococcus	Not detected	Not detected	
Staphylococcus aureus	Not detected	Not detected	
Streptococcus	Not detected	Not detected	
Streptococcus agalactiae (Group B)	Not detected	Not detected	
Streptococcus pneumoniae	Not detected	Not detected	
Streptococcus pyogenes (Group A)	Not detected	Not detected	
Acinetobacter baumannii	Not detected	Not detected	
Enterobacteriaceae	Not detected	Not detected	
Enterobacter cloacae complex	Not detected	Not detected	
Escherichia coli	Not detected	Not detected	
Klebsiella oxytoca	Not detected	Not detected	
Klebsiella pneumoniae	Not detected	Not detected	
Proteus	Not detected	Not detected	
Serratia marcescens	Not detected	Not detected	
Haemophilus influenzae	Not detected	Not detected	
Neisseria meningitidis	Not detected	Not detected	
Pseudomonas aeruginosa	Detected (A)	Not detected	
Candida albicans	Not detected	Not detected	
Candida glabrata	Not detected	Not detected	
Candida krusei	Not detected	Not detected	
Candida parapsilosis	Not detected	Not detected	
Candida tropicalis	Not detected	Not detected	