



# BioFire Blood Culture Identification System (BCID) Fact Sheet

<b>What is BioFire BCID?</b>	<b>BioFire BCID is a multiplex polymerase chain reaction (PCR) test designed to identify 24 different microorganism targets and three antibiotic resistance genes from positive blood culture bottles.</b>
<b>What is the purpose of BCID?</b>	The purpose of BCID is to rapidly identify common microorganisms and antibiotic resistance genes from positive blood cultures so that antimicrobial therapy can be quickly optimized by the physician and the antibiotic stewardship pharmacist. It is anticipated that this will result in improved patient outcomes, decreased length of stay, improved antibiotic stewardship, and decreased costs.
<b>When will BCID be routinely performed?</b>	BCID is performed on all initially positive blood cultures after the gram stain is performed and reported.
<b>When will BCID <u>not</u> be routinely performed?</b>	For blood cultures on the same patient that subsequently become positive with a microorganism showing the same morphology as the initial positive blood culture, BCID will not be performed. BCID will not be performed on positive blood cultures with gram positive bacilli unless <i>Listeria</i> is suspected. BCID will not be performed on blood culture bottles > 8 hours after becoming positive. BCID will not be performed between 10PM-7AM on weekdays and 2PM-7AM on weekends. BCID will not be performed for clinics that have specifically opted out of testing.
<b>How soon will BCID results be available?</b>	After the blood culture becomes positive and the gram stain is performed and reported, the bottle will be sent to the core Microbiology lab by routine courier. BCID testing will then be performed. It is anticipated that total turnaround time will generally be 2-3 hours after the gram stain is reported.
<b>How will BCID results be reported?</b>	All BCID results will be interpreted by the technologist and reported electronically per routine. In addition, for inpatients, BCID results will be called to the attention of antibiotic stewardship pharmacist either by phone or through an alert in EPIC.
<b>What targets are detected and identified by BCID? What is the accuracy of BCID?</b>	BCID identifies the following microorganism targets: <i>Enterococcus</i> , <i>Listeria monocytogenes</i> , <i>Staphylococcus</i> (genus), <i>Staphylococcus aureus</i> , <i>Streptococcus</i> (genus), <i>Streptococcus agalactiae</i> (Group B), <i>Streptococcus pyogenes</i> (Group A), <i>Streptococcus pneumoniae</i> , <i>Acinetobacter baumannii</i> , <i>Haemophilus influenzae</i> , <i>Neisseria meningitidis</i> , <i>Pseudomonas aeruginosa</i> , <i>Enterobacteriaceae</i> (family), <i>Enterobacter cloacae</i> (complex), <i>Escherichia coli</i> , <i>Klebsiella oxytoca</i> , <i>Klebsiella pneumoniae</i> , <i>Proteus</i> (genus), <i>Serratia marcescens</i> , <i>Candida albicans</i> , <i>Candida glabrata</i> , <i>Candida tropicalis</i> , <i>Candida krusei</i> and <i>Candida parapsilosis</i> . BCID also identifies the <i>mecA</i> (methicillin resistance), <i>vanA/B</i> (vancomycin resistance), and KPC ( <i>Klebsiella pneumoniae</i> carbapenemase) genes. The accuracy of BCID was 99.9% in our verification study.
<b>What does a result of “No target detected” mean?</b>	A BCID result of “no organism detected” indicates that the positive blood culture contains a microorganism other than those noted above. <b>Page 2 of this BCID Fact Sheet outlines some common possibilities by gram stain.</b> Note this listing is NOT all inclusive.

Gram Stain	BCID Possible Microorganisms <u>(not all inclusive)</u>	
<b>Gram positive cocci (aerobic or both aerobic &amp; anaerobic)</b>	<i>Micrococcus</i> <i>Aerococcus</i> <i>Abiotrophia/Granulicatella</i>	Viridans streptococci Non Group A or B beta-hemolytic strep (nutritionally variant strep)
<b>Gram positive cocci (only anaerobic)</b>	<u>All of the above plus:</u> <i>Peptostreptococcus</i> <i>Finegoldia</i>	
<b>Gram positive bacilli (aerobic or both aerobic &amp; anaerobic)</b>	<i>Bacillus</i> <i>Corynebacterium</i> <i>Lactobacillus</i>	<i>Nocardia</i> <i>Mycobacterium</i>
<b>Gram positive bacilli (only anaerobic)</b>	<u>All of the above plus:</u> <i>Clostridium</i> <i>Actinomyces</i> <i>Propionibacterium</i>	
<b>Gram negative cocci (aerobic or both aerobic &amp; anaerobic)</b>	<i>Moraxella catarrhalis</i> <i>Neisseria</i> species (not <i>N. meningitidis</i> )	<i>Kingella</i>
<b>Gram negative cocci (only anaerobic)</b>	All of the above plus:	<i>Veillonella</i>
<b>Gram negative bacilli (aerobic bottle or both aerobic &amp; anaerobic)</b>	<i>Burkholderia cepacia</i> <i>Stenotrophomonas</i> <i>Aggregatibacter</i> <i>Pasteurella</i> <i>Francisella tularensis</i>	<i>Pseudomonas</i> (not <i>P. aeruginosa</i> ) <i>Haemophilus</i> (not <i>H. influenzae</i> ) <i>Brucella</i> <i>Legionella</i>
<b>Gram negative bacilli (only anaerobic)</b>	<u>All of the above plus:</u> <i>Bacteroides fragilis</i> group <i>Fusobacterium</i> <i>Prevotella</i> <i>Porphyromonas</i>	
<b>Yeast</b>	<i>Cryptococcus</i> <i>Malassezia</i>	<i>Histoplasma</i> Other <i>Candida</i> species

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