

PNA FISH® & BinaxNOW® PBP2a

Rapid, Accurate Results Direct from Positive Blood Cultures

Staphylococci are the most frequent causes of bloodstream infections and blood culture contamination. True infections with *Staphylococcus aureus* present considerable clinical challenges and increase mortality rates, prolong hospital stays and add significant extra costs. The lack of timely identification of methicillin resistant *S. aureus* (MRSA) contributes to this clinical challenge, forcing clinicians to treat empirically which can be costly, ineffective and contribute to increasing antibiotic resistance. Blood culture contamination with Coagulase-Negative Staph (CNS) on the other hand leads to unnecessary coverage with broad-spectrum antibiotic therapy, extra length of stay and unnecessary extra costs.

The combination of PNA FISH and BinaxNOW PBP2a testing provides a unique, cost-effective, and easy-to-use solution to help labs provide rapid, accurate results to clinicians. This critical data will aid physicians and pharmacists in optimizing antibiotic therapy and care for patients with true *S. aureus* and MRSA infections while avoiding unnecessary therapy for patients with contaminated blood cultures.

Features:

- Identification of *S. aureus* and CNS direct from positive blood cultures in ≤ 90 mins. with PNA FISH
- Detection of PBP2a, present in MRSA, *S. aureus* positive blood cultures in just 30 mins. with BinaxNOW PBP2a

Benefits:

- MRSA, *S. aureus* and CNS results within 2 hrs
- Can detect mixed cultures; only test *S. aureus* positives for MRSA
- High sensitivity and specificity
- Easily integrates into standard lab workflow
- Limited capital startup costs

Workflow from Positive Blood Cultures

Positive Blood Culture

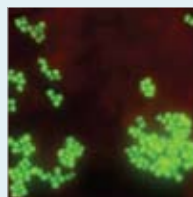


Gram stain (~ 15 min.)

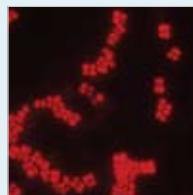


GPCC+

PNA FISH® (≤ 90 mins.)

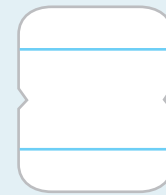


S. aureus

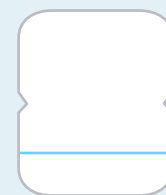


CNS

BinaxNOW® PBP2a (30 mins.)



PBP2a Positive (MRSA)



PBP2a Negative (*S. aureus*)

PNA FISH®

BinaxNOW®

MRSA, *S. aureus* and CNS

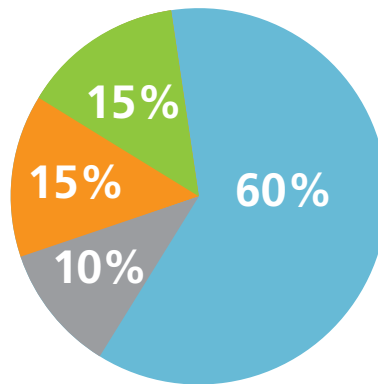
GPCC-Positive Blood Cultures: Species Distribution¹

MRSA Bacteremia (15%)

- Associated with high mortality rates and requires early and aggressive therapy
- 50% of patients with MRSA bloodstream infection receive inappropriate empirical antimicrobial therapy²
- Emergence of vancomycin-intermediate *S. aureus* (VISA)³

MSSA Bacteremia (15%)

- Requires early and aggressive therapy
- Nafcillin considered a superior drug for treating patients with MSSA bacteremia⁴



CNS Contamination (60%)

- Leads to unnecessary therapy with broad-spectrum antibiotics such as vancomycin
- Results in extra hospital length of stay (LOS) and more than \$4,000 in extra bed, pharmacy and laboratory costs⁵
- CDC Recommendations: Vancomycin should be discouraged for patients with single positive blood culture when other blood cultures are negative⁶

CNS Bacteremia (10%)

- 10% of GPCC-Positive Blood Culture
- Associated with indwelling devices and catheters⁷

PNA FISH and BinaxNOW Performance Data

S. aureus/CNS PNA FISH[®]

		Conventional Identification				Sensitivity SA: 100%	Sensitivity CNS: 100%	Specificity: 81.8%	PPV SA: 100%	PPV CNS: 99%	NPV: 100%
		SA	CNS	Other	Total						
PNA FISH [®]	<i>S. aureus</i>	113	0	0	113						
	CNS	0	278	2	280						
	Negative	0	0	9	9						
	Total	113	278	11	402						

SA = *S. aureus*, CNS = Coagulase Negative Staphylococci.
 **Micrococcus* spp. (4), Other Species (7)

BinaxNOW[®] PBP2a

		Conventional Methods*			Positive Agreement: 97.1%
		MRSA	MSSA	Total	
BinaxNOW [®] PBP2a	Positive	99	0	99	Negative Agreement: 100%
	Negative	3	97	100	
	Total	102	97	199	

*Cefoxitin disc diffusion, Oxacillin disc diffusion, Automated Antimicrobial Susceptibility Test System.

For further information please contact your local AdvanDx representative, call 1-866-376-0009, or e-mail info@advandx.com.

1. Ann Clin Microbiol Antimicrob. 2004 May 10;3:7
 2. Infect. Control Hosp Epidemiol. 2009 Nov;30(11):1057-61
 3. Clin Infect Dis. 2009 Aug 1;49(3):325-7
 4. Medicine. 2003; 82:333-339
 5. JAMA. 1991 Jan 16;265(3):365-9
 6. MMWR 44(RR12);1-13 Date: Sep 22, 195
 7. Poster D-787. ICAAC 2009. San Francisco, CA