ePlex® Blood Culture Identification Panels

In a Race Against Time, Get Rapid ID With the Most Comprehensive Sepsis Panels
Physicians today are faced with significant challenges in the diagnosis of sepsis. It can take days to identify the causative organisms and treatment options for blood stream infections, which can lead to delays in effective antimicrobial therapy, increased hospital costs and higher patient mortality rates.

The High Cost of Sepsis
Every year sepsis strikes nearly 30 million people across the globe.

Bloodstream Infections (BSI) are the most expensive condition treated in hospitals costing about €25,000 per case.

resulting in a death every 3-4 seconds

The Emerging Risk of Fungal Pathogens
Fungal pathogens are a growing cause of BSI and are associated with some of the highest rates of inappropriate initial therapy and mortality.

Hospital mortality rate of invasive candidiasis is estimated between 46%-75%

Excess costs per episode up to $92,000

Rapid Identification is Critical
Traditional methods can take days to identify the causative agents of sepsis.

For every hour effective antibiotics are delayed, the sepsis mortality rate increases up to 8%

20%-30% of patients receive ineffective initial antibiotic therapy

Antimicrobial Resistance: A Serious Global Threat
Up to 50% of antibiotics prescribed in hospitals are either unnecessary or inappropriate, and taking antibiotics when not needed can put patients at risk for serious adverse events and lead to the development of antibiotic resistance.

Antimicrobial-resistant infections currently claim at least 50,000 lives each year across Europe and the US.

By 2050, it is estimated that 10 million people will die annually due to antimicrobial resistant infections.

1 Sepsis Fact Sheet, World Sepsis Day; www.world-sepsis-day.org.
2 The UK Sepsis Trust Fact Sources; http://sepsistrust.org/fact-sources.
5 Pfaller, et. al., Clinical Microbiology Reviews, Jan. 2007, p. 133-163.
6 Kumar, et. al., Crit Care Med 2006 Vol. 34, No. 6, p. 1589-1596.
**ePlex BCID Panels**: The only test for rapid, routine BCID, enables physicians to rapidly identify more clinically relevant bloodstream infections and their resistance genes while quickly ruling out blood culture contamination which can result in earlier treatment decisions. Rapid molecular diagnosis of sepsis has been shown to improve patient outcomes, antimicrobial stewardship and reduce hospital costs.

**Rapid Identification and Reporting**

*True sample-to-answer workflow:* The ePlex System is so easy to use it can be run on any shift, so critical patient samples never have to wait until morning.

- ePlex BCID Panels deliver results in ~1.5 hours from bottle culture.
- Beating conventional culture-based tests by as much as 2 days.

With automated results reporting via LIS and remote alerts there is no delay in patient reporting.

**The Value of Resistance Genes**

Resistance genes can detect the potential for resistance even in cases where antibiotics appear active by AST but may not be effective clinically, so even if a gene hasn’t been expressed, the resistance genotype won’t be missed.

**Timely Treatment Decisions For More Patients**

ePlex BCID Panels include the broadest coverage of bacterial and fungal organisms and resistance genes available from a sample-to-answer multiplex diagnostics.

- coverage of >95%\(^{12}\) of the organisms causing sepsis, so nearly every patient will get a rapid result.

**Patient Centered Care**

Rapid ID of the causative agents in BSI with multiplex molecular diagnostics has been shown to decrease time to targeted therapy by ~25 hours\(^{13}\) and length of hospital stay by 2.5 days.\(^{14}\) Resulting in:

- IMPROVED
  - Patient care
  - Antimicrobial stewardship
  - Patient satisfaction
  - Patient safety

- DECREASED
  - Time to answer
  - Time to targeted therapy
  - Hospital length of stay
  - Total cost of care

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11 EUCAST, Guidelines for detection of resistance mechanisms and specific resistances of clinical and/or epidemiological importance.
12 Based on ePlex panel inclusivity compared to the GenMark prospective clinical trial database and an additional clinical data set (Potula, et. al., MLO, 2015), not intended as sensitivity/performance claims.
# Comprehensive Coverage of Pathogens and Resistance Genes

## Gram-Positive Targets
- Bacillus cereus group
- Bacillus subtilis group
- Corynebacterium
- Cutibacterium acnes
- Enterococcus
- Enterococcus faecalis
- Enterococcus faecium
- Lactobacillus
- Listeria
- Listeria monocytogenes
- Micrococcus
- Staphylococcus
- Staphylococcus aureus
- Staphylococcus epidermidis
- Staphylococcus lugdunensis
- Streptococcus
- Streptococcus agalactiae (GBS)
- Streptococcus anginosus group
- Streptococcus pneumoniae
- Streptococcus pyogenes (GAS)

## Resistance Genes
- mecA    vanA
- mecC    vanB

## Pan Targets
- Candida
- Gram-Negative

## Gram-Negative Targets
- Acinetobacter baumannii
- Bacteroides fragilis
- Citrobacter
- Cronobacter sakazakii
- Enterobacter (non-cloacae complex)
- Enterobacter cloacae complex
- Escherichia coli
- Fusobacterium nucleatum
- Fusobacterium necrophorum
- Haemophilus influenzae
- Klebsiella oxytoca
- Klebsiella pneumoniae
- Morganella morganii
- Neisseria meningitidis
- Proteus
- Proteus mirabilis
- Pseudomonas aeruginosa
- Salmonella
- Serratia
- Serratia marcescens
- Stenotrophomonas maltophilia

## Resistance Genes
- CTX-M
- NDM
- IMP
- OXA
- KPC
- VIM

## Pan Targets
- Candida
- Gram-Positive

## Fungal Targets
- Candida albicans
- Candida auris
- Candida dubliniensis
- Candida famata
- Candida glabrata
- Candida guilliermondii
- Candida kefyr
- Candida krusei
- Candida lusitaniae
- Candida parapsilosis
- Candida tropicalis
- Cryptococcus gattii
- Cryptococcus neoformans
- Fusarium
- Rhodotorula

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For more information on the ePlex® System and BCID family of panels, please visit [www.genmarkdx.com/BCID](http://www.genmarkdx.com/BCID)