The role of microbial genotyping in the clinical lab

A case study for MRSA

Rapid tests can tell you that you have resistant *S. aureus*, but they can’t tell you where it is from. More than 10% of all MRSA infections in the US are CA-MRSA. Fortunately, CA-MRSA are genetically distinguishable from hospital strains. Distinguishing the source of your MRSA is important to influence patient isolation procedures, outbreak monitoring and reduced costs due to nosocomial infections.

How DiversiLab™ can help
DiversiLab is a microbial genotyping system that allows the characterization and strain discrimination of both bacterial and fungal isolates. The DiversiLab *Staphylococcus* kit allows all *Staphylococcus* species to be genotyped, including *S. aureus*. Recent studies show that DiversiLab provides strain-level discrimination of MRSA similar to that seen with PFGE.

Each MRSA isolate that is discovered in your facility can be analyzed using the DiversiLab System. DiversiLab generates a genetic fingerprint for each sample that can be compared to each other to determine similarities. The samples may also be compared to the DiversiLab MRSA library of standard PFGE types for additional characterization. These results will allow you to answer the following questions:

Do I have an outbreak?
If all isolates show an indistinguishable fingerprint pattern, the patients may be part of an outbreak. Prevention procedures such as isolation precautions, decontamination of equipment and increased infection control measures can be enacted immediately to prevent further spread of the infection.

Is it a CA-MRSA?
A new fingerprint that has not been previously seen in the healthcare facility may indicate that the strain was community-acquired or brought from another healthcare facility.

Is it similar to one of the established USA PFGE types?
Fingerprints with similarity to one of the USA types can indicate whether your outbreak is similar to those seen in other facilities. For example, USA 100 is the most common strain of hospital-acquired MRSA and USA 300 is the most common strain of community-acquired MRSA.

Why should I use the DiversiLab System as my genotyping method?
The DiversiLab System provides strain-level discrimination of MRSA in an easy-to-use, automated format. The DiversiLab System provides similar discrimination to other standard typing methods with greater ease-of-use through commercially available, standardized protocols. With results in a single day, an outbreak can be determined and eradicated quickly.
The DiversiLab System at a Glance

• Highly accurate, reproducible rep-PCR technology with standardized protocols and reagents

• Automated analysis with multiple data viewing features to aid with analysis

• Same day strain-typing for real-time investigations

• Data storage to allow tracking and comparison of pathogens from users proprietary database or DiversiLab reference database

• Ability to genotype both bacteria and fungi at the strain-level

• An expanding list of libraries for identification and comparison to standard samples

Included with the DiversiLab System:
Agilent 2100 Bioanalyzer
Desktop Computer
DiversiLab System Software for Data Analysis
Agilent Software for Instrument Operation
Chip Priming Station
Vortex Mixer
Training Course

If you already have a Bioanalyzer, you only need to add the DiversiLab System Software.

For more information about how the DiversiLab System can be incorporated into your lab, please call us today.

Not for Use in Diagnostic Procedures.