Calvin Gunter, Global Product Manager, Bovine Diagnostics, Thermo Fisher Scientific ADVERTORIAL

Multiplex PCR panels tailored for efficient mastitis testing

PCR testing for mastitis is now faster and more convenient

Because bovine mastitis can cause significant economic losses, veterinarians and farmers need quick diagnostic results so that they can take fast and appropriate action. Traditionally, culture has been used for the diagnosis of mastitis infections. However, culture can take up to 10 days to receive results, and pathogens can be hard to grow, especially *Mycoplasma* species. *Prototheca* species are becoming more prevalent in mastitis cases but are also difficult to grow in standard culture. Some pathogens can be hard to discriminate in culture, such as *Klebsiella* vs. *E. coli* and *Mycoplasma* vs. *Acholeplasma,* but require a completely different follow-up action.

In most cases, PCR is the solution for these difficulties, and using an efficient workflow with fast and convenient nucleic acid extraction is a good starting point. The Applied Biosystems™ MagMAX™ CORE Nucleic Acid Purification Kit and the MagMAX™ CORE Mastitis & Panbacteria Module give high yields of nucleic acid and are flexible enough to be used with frozen, preserved, or fresh milk samples.

The DNA can then be used in multiplex qPCR panels designed to provide accurate, same-day results. Typically, panels are used to detect all major mastitis-causing pathogens, major contagious mastitis-causing pathogens, or major *Mycoplasma* species causing mastitis.

Major mastitis-causing pathogens

- *Staphylococcus aureus*
- *Staphylococcus* spp. (including all major coagulase-negative staphylococci)
- *Streptococcus agalactiae*
- *Streptococcus dysgalactiae*
- *Streptococcus uberis*
- *Escherichia coli*
- *Enterococcus* spp. (including *E. faecalis* and *E. faecium*)
- *Klebsiella oxytoca* and/or *K. pneumoniae*
- *Serratia marcescens*
- *Corynebacterium bovis*
- *Trueperella pyogenes* and/or *Peptoniphilus indolicus*
- Staphylococcal β-lactamase gene (penicillin-resistance gene)
- *Mycoplasma bovis*
- *Mycoplasma* spp.
- Yeast
- *Prototheca* spp.

Major contagious mastitis-causing pathogens

- *Mycoplasma bovis*
- *Staphylococcus aureus*
- *Streptococcus agalactiae*
- *Streptococcus uberis*

Major *Mycoplasma* species infecting cattle

- *Mycoplasma alkalescens*
- *Mycoplasma bovis*
- *Mycoplasma bovigenitalium*
- *Mycoplasma canadense*
- *Mycoplasma californicum*
- *Mycoplasma* spp.
- *Staphylococcus aureus*
- *Streptococcus agalactiae*

Simplify, accelerate, and standardize your results

Interpretation of results is simple and standardized with Applied Biosystems™ VeriVet Software. Its innovative cloud-based data analysis and storage system offers an easy readout of positive and negative results with interpretation software, using the Applied Biosystems™ QuantStudio™ 5 and 7500 Fast PCR instruments.

A fast, clear view of results is provided through fully automated analysis, so there's no need to interpret curves or C_t, make manual adjustments, or do any calculations. Inhibited samples are also identified, offering a level of quality control.

The Animal Health VeriVet app allows you to create a plate layout, generate a template file for import to the real-time PCR instrument, and remotely monitor the instrument run.

Find out more at **thermofisher.com/mastitis**

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