

Vinqury Laboratories by Enartis USA is proud to announce that it is now offering an entire range of RT-qPCR testing that can be done for individual microbes or as an all-inclusive panel for \$110. Don't let costs keep you from being proactive when it comes to microbial management and spoilage prevention.

Proactive Winemaking

Spoilage yeast and bacteria contamination can quickly become a costly problem for a winery. Once these organisms are introduced, they can easily be spread through hoses, equipment, humans, and insect vectors. As soon as contamination is detected, proper procedures should be taken to minimize spoilage and maintain wine quality. To help winemakers in being proactive, Vinqury Laboratories by Enartis USA offers individual RT-qPCR assays that cover a comprehensive range of wine microorganisms.

What is Real-Time Quantitative PCR (RT-qPCR)?

It is a rapid method to identify organisms by amplification and detection of unique sequences of their DNA while the polymerase chain reaction (PCR) is taking place. About an hour after DNA is isolated, millions of copies of the unique genetic sequence from the target organism are generated, detected and quantified with fluorescent probes. The fluorescence produced is proportionate to the number of DNA copies generated, which indicates the number of targeted microorganism cells in the sample.

Assays Available

Based upon published articles by David Mills and Trevor Phister, Vinqury Laboratories by Enartis USA has validated Real-Time PCR assays for *Brettanomyces*, *Saccharomyces cerevisiae* and *Zygosaccharomyces bailii*. In addition, we have developed assays for the following bacteria: Acetic Acid Bacteria (*Acetobacter*, *Gluconobacter*, and *Gluconacetobacter*), *Lactobacillus*, *Oenococcus* and *Pediococcus*.

Spoilage Microbes

- ***Brettanomyces*** is one of the most notorious wine spoilage yeasts. Brett can strongly alter the sensory characteristics of wine.
- ***Saccharomyces cerevisiae***: While beneficial for primary fermentation,

Microbes	Prevention/Treatment
Acetic Acid Bacteria	SO ₂ , Enartis Stab Micro, Filtration
Lactic Acid Bacteria	pH, SO ₂ , Enartis Zym Lyso, Enartis Stab Micro, Filtration
Brettanomyces	pH, SO ₂ , Enartis Stab Micro, Filtration
Zygosaccharomyces	SO ₂ , Enartis Stab Micro, Filtration
Saccharomyces	SO ₂ , Enartis Stab Micro, Filtration

Figure 1: prevention and treatment of spoilage microorganisms in wine

Saccharomyces is a potential spoilage organism in finished wine with residual sugar.

- ***Zygosaccharomyces bailii*** is commonly found in grape concentrate. This yeast is resistant to common preservatives used in winemaking, high osmotic pressure of concentrate, as well as high alcohol content.
- **Acetic Acid Bacteria** all contribute to acetic acid and ethyl acetate production, responsible for vinegar and nail polish aromas.
- ***Lactobacillaceae*** is the most notorious wine lactic acid bacteria. It produces acetic acid, biogenic amines and off-flavors such as mousiness. In addition, *Lactobacillus* development can inhibit yeast fermentation and causes stuck fermentations.
- ***Oenococcus***: Beneficial for malolactic fermentation, this lactic acid bacteria is also capable of producing acetic acid and off-flavors. An uncontrolled development of *Oenococcus* can cause stuck fermentations.
- ***Pediococcus*** is a spoilage lactic acid bacteria that can produce acetic acid, biogenic amines and off-aromas. *Pediococcus* can be responsible for ropiness, inducing filtration issues.

Pricing

Each initial assay is \$55, with any additional testing at \$20 each. The PCR Panel is composed of all seven assays and is \$110 (\$180 if priced separately).

Sampling

RT-qPCR Analysis requires 50 mL of sample. In order to ensure a representative sample of the wine, we recommend to sample after stirring or racking. Use plastic containers only. Complementary plastic sample bottles are available from all four Vinqury Laboratories locations. Please call the phone number below to have sample bottles shipped to you. For further information on PCR Analysis, please call 707-838-6312.

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