



MMM Beverage
Partner Kit.

Detection and identification of viable spoilage thermo-, acidophilic *Alicyclobacillus* bacteria

ACB LC RT-PCR Workflow System

MMM Beverage Partner's ACB LC RT-PCR Workflow System allows rapid detection of viable thermo-, acidophilic bacteria belonging to the genus of *Alicyclobacillus* from filterable and non-filterable beverage products (juices, teas, energy drinks, concentrates). Detection of *Alicyclobacillus* bacteria is very important because some of these thermo-acidophilic, spore-forming bacteria can produce guaiacol which causes off-flavour, spoilage of the acidic beverage and food. This system identifies also the different *Alicyclobacillus* species (*A. acidiphilus*, *A. acidocaldarius*, *A. acidoterrestris*, *A. cycloheptanicus*, *A. herbarius*, *A. hesperidum*, *A. pomorum*; Fig1.). Detection and identification of *Alicyclobacillus* bacteria is carried out in one step.

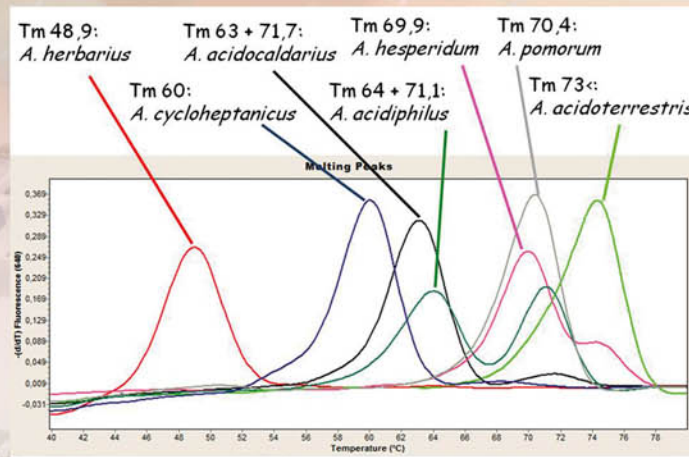


Fig. 1. Identification of different *Alicyclobacillus* bacteria

MMM Beverage Partner's ACB LC RT-PCR Workflow System uses automated nucleic acid purification, automated PCR set up and automated detection and identification in results reporting.

The ACB LC RT-PCR Workflow System Kit includes:

- ACB Pre-cultivation Kit
- ACB Isolation Kit
- *Alicyclobacillus* detection and identification Real-Time PCR Kit.

ACB Pre-cultivation Kit is specifically developed for *Alicyclobacillus* bacteria cultivation, enzymatic treatment and cell-disruption for non-filterable and filterable samples prior to nucleic acid isolation. *Alicyclobacillus* bacteria are cultivated at selective conditions. After pre-cultivation, free nucleic acids are eliminated then the intact cells are disrupted.

ACB Isolation Kit is designed for the purification of genomic DNA of *Alicyclobacilli* from concentrates or bottled final beverage products, water or culture cells by using the MagNA Pure LC Instrument (Roche). The purified high molecular weight DNA is used for *Alicyclobacillus* detection and identification Real-Time PCR Kit.

Microbiological Quality Control of Beverages

Rapid Detection and Identification of Viable Spoilage

Microorganisms

***Alicyclobacillus* detection and identification Real-Time PCR Kit** is specifically developed for real-time, online PCR using Hybridization Probes. *Alicyclobacillus* DNA is amplified with specific primers designed for the conservative region of the *Alicyclobacillus* bacterial genome. The amplicon is detected by fluorescence using a specific pair of Hybridization Probes. Hybridization Probes are used for identification of the different *Alicyclobacillus* species.

Sample material:

There is no need to separate any sample components (e.g. fruit fibres) before the analysis which separation would mean the risk to lose contaminants attached to the separated components. Our system provides you the possibility to analyze the total contents of your sample even if it is 100% fruit juices with pulp.

- bottled final beverage products (filterable and non-filterable, including 100% fruit juices with pulp)
- concentrates
- pure culture (e.g., colonies)
- water samples
- swab samples

Key features of our system:

- Fast: Result can be gained even within 3 hours.
- Robust: 100ml can be examined even from non-filterable beverages.
- Throughput of the LC RT-PCR Workflow System: 60 bottles / 1.5 h
- Detection and identification of the contaminants in one step
- Sensitive: Even the presence of one single cell of unwanted microorganism in the sample can be detected and identified.
- Specific: While all of spoilage microorganisms are detected, harmless microorganisms out of interest do not affect the result due to specific hybridization probes.
- The same kit and protocol can be used for filterable and for non-filterable samples.
- Automated processes
- Automatic evaluation and interpretation of results
- Electronic storage of data
- Effective tool for both Quality assurance and Root Cause analysis
- Flexible system
- Reproducible results

We are proud of our Real-Time PCR system being the first rapid PCR based microbiological method approved and recognized by Coca-Cola Hellenic as an alternative method to the conventional analysis. Coca-Cola Hellenic introduced our Real-Time PCR systems in their quality assurance system for detection of potential spoilage microorganisms.

Related products:

- **FUN LC RT-PCR Workflow System Kit:** Rapid detection of viable yeasts and moulds from filterable and non-filterable beverage products (juices, teas, energy drinks, concentrates). Identification of relevant yeasts and moulds.
- **LAB LC RT-PCR Workflow System Kit:** Rapid detection of viable *Lactobacillus* bacteria from filterable and non-filterable beverage products (juices, teas, energy drinks, concentrates). Coming soon...
- **RT-PCR upgrade package:** This product allows you to upgrade your classical microbiological laboratory to RT-PCR laboratory. This upgrade package includes all the tools you need: equipments, specific software parts for nucleic acid purification and detection, installation and training.

Contact information...

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