

GeneDisc® Technologies

For the Rapid Detection and Identification of TAB Spoilage

Alicyclobacillus spp., also known as Thermophilic Acidophilic Bacteria (TAB), are spoilage organisms in the fruit juice industry. They can generate strong off flavors and off odors due to guaiacol or bromophenols production.

Their ability to grow at acidic pH and their resistance to normal thermal processing such as common pasteurization have made these bacteria a major quality issue for processors of juices and concentrates.

Contamination with these non-pathogenic bacteria can occur at various stages of the process. Rapid detection and identification of TAB spoilage is an informative solution to increase quality monitoring at identified critical points of the process to facilitate release of high quality products.

GeneDisc System Benefits

Rapid — While culture methods require up to 10 days to results, Pall's GeneDisc method allows a simultaneous detection and identification of *Alicyclobacillus* spp. in as fast as 2 days.

Easy to use — GeneDisc method is designed for routine use and validated from sample to result. Implementing PCR (Polymerase Chain Reaction) has never been this easy.

Modular — System modularity fits your throughput needs: up to 48 samples can be analyzed in a one hour PCR run.

A Solution Designed for Beverage Industries

Save money — Shorter time to results reduces your storage cost by accelerating the release of your raw materials and/or final products. GeneDisc ease of use will also reduce your overall testing cost.

Get informative results — GeneDisc method allows the simultaneous detection of *Alicyclobacillus* spp. and identification of the 4 strains known to be main potential spoilers (*A. acidoterrestris*, *A. acidophilus*, *A. cycloheptanicus*, *A. herbarius*).

Avoid false results — Unique highly specific and sensitive tests enable a wide coverage of *Alicyclobacillus* species.



Alicyclobacillus spp. Identification

Bacteria	Gram +, rod shaped, sporeforming bacillus
Distinctive features	Thermophilic (20 – 70 °C) Acidophilic (pH 2.0 – 6.0)
Identified in	Fruit juices and concentrates, ingredients such as sugar syrups and sugar powders, condensate water
Main spoilage associated strains	<i>A. acidoterrestris</i> <i>A. acidophilus</i> <i>A. cycloheptanicus</i> <i>A. herbarius</i>



How the System Works



Technical Information

Enrichment Time	Filterable samples	48 hours
	Unfilterable samples	72 hours
Sample Preparation Time	Filterable samples	1 hour for 24 samples
	Unfilterable samples	1 hour for 24 samples
PCR Cycle Time		< 1 hour
Total Turnaround Time	Filterable samples	50 hours
	Unfilterable samples	74 hours
Hands On Time	Filterable samples	35 minutes for 24 samples
	Unfilterable samples	25 minutes for 24 samples
Limit Of Detection	Absence in 10 mL or 10 g of sample	
Specificity	<ul style="list-style-type: none"> • Wide range of strains tested for inclusivity and exclusivity • <i>Alicyclobacillus</i> spp. assay covers over 200 strains 	
Validated Matrices	<ul style="list-style-type: none"> • Fruit concentrate and fruit juice (including apple, orange, grapefruit, white and red grape, blueberry, mango) • Sugar powder and sugar syrup • Condensate water 	
Internal Positive Control	<ul style="list-style-type: none"> • Detects presence of inhibitors in each sample DNA extract 	

Ordering Information

Part Number	Description	Samples/pack
Equipment		
EGDCV3A	GeneDisc Cyclor Base Unit	-
EGDSV3A	GeneDisc Cyclor Sub Unit	-
EGDUL1A230 (EU)	GeneDisc Ultra-Lyser	-
EGDUL1A120 (US)		
Consumables		
PFOOD1100	Extraction Pack Food 1	100
GTABSP0106006	GeneDisc Plate for TAB Spoilage	36

We also offer a full product range for pathogen detection in food and water and for spoilage organisms in beverage.

Quantitative tests for pathogens in water (*Legionella*, *E. coli*, *Enterococcus*...) are also available.

For more information including part numbers please contact us.

Further Readings

- Poster: Zoder P. *et al.* Novel Molecular Assay and Sample Preparation Method for the Detection of *Alicyclobacillus* in Fruit Juice Concentrates and Bottling Process Materials, Spoilers 2013.



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