

Composition

Va-YSG Medium (100 tests)	Cat. No. KYO-08901
Vanillic acid added YSG medium for guaiacol formation	2 ml x 100 tubes
	Storage: 2-10°C

Guaiacol Detection Kit (100 tests)	Cat No. KYO-08921
Reagent 1: 50 mM Potassium hydrogen phthalate Buffer	60 ml x 2 bottles
Reagent 2: 1.3% hydrogen peroxide solution	2.5 ml x 1 tube
Reagent 3: Peroxidase-Phosphoric Acid Buffer	2.5 ml x 1 tube
Positive Control: Guaiacol (1050 ppm)	2.5 ml x 1 tube
	Storage: 2-10°C

References

- [1] G.Deinhard, *et al.*, *Bacillus acidoterrestris* sp. nov., a new thermotolerant acidophile isolated from different soils. *Syst. Appl. Microbiol.* **10**, 47-53 (1987)
- [2] GOTO, M., Spore-forming thermo-acidophilic bacilli of the genus *Alicyclobacillus*, *Bokin Bobai*, **28** (8), 499-508 (2000), in Japanese
- [3] GOTO, K., Lecture on "Classification and identification of microbes" 1. Classification and properties of new thermo-acidophilic bacilli, *January 2001 issue of Soft Drink Technical Data*, 9-26 (2001), in Japanese
- [4] Niwa, M., *et al.*, Development of a rapid detection method of *A.acidoterrestris*, hazardous bacteria to acidic beverage. *Fruit processing*, **13**, 102-107 (2003)
- [5] Japan Fruit Juice Association, On the unified test method for thermo-acidophilic bacilli, *Report of Japan Fruit Juice Association*, **535**, 4-12 (2003), in Japanese
- [6] Niwa, M., *et al.*, *A.acidoterrestris* rapid detection kit, *Fruit processing*, **13**, 328-331 (2003)
- [7] Niwa, M., Control of deleterious bacteria in acidic beverages by using a guaiacol detection kit (peroxidase method), *Japan Food Science*, 2004-2, 23-28 (2004), in Japanese
- [8] Japan Laid-Open P2003-259A "Detection of guaiacol forming bacteria and/or its identification method"

Ordering information

Description	Cat. No.	Quantity
Va-YSG Medium	KYO-08901	100 PC
Guaiacol Detection Kit	KOY-08921	100 TEST

For research use only, Not for diagnostic use.

Manufacturer: KYOKUTO PHARMACEUTICAL INDUSTRIAL CO., LTD.



COSMO BIO Co., LTD.

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For guaiacol formation

Va-YSG Medium

Cat. No. KYO-08901



For detection of guaiacol-producing TAB

Guaiacol Detection kit

Cat. No. KYO-08921

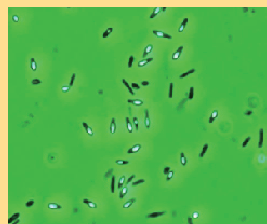


What's bad about TAB?

Alicyclobacillus acidoterrestris (AAT) is a gram-positive, spore-forming bacillus that occurs widely in nature. This species has been studied substantially after the incident of turbidity of transparent apple juice in 1984. The *Alicyclobacillus* genus bacteria, which peculiarly grow under relatively high temperature and acidic condition, are called Thermo-Acidophilic Bacilli (TAB)^{1,2,3}.

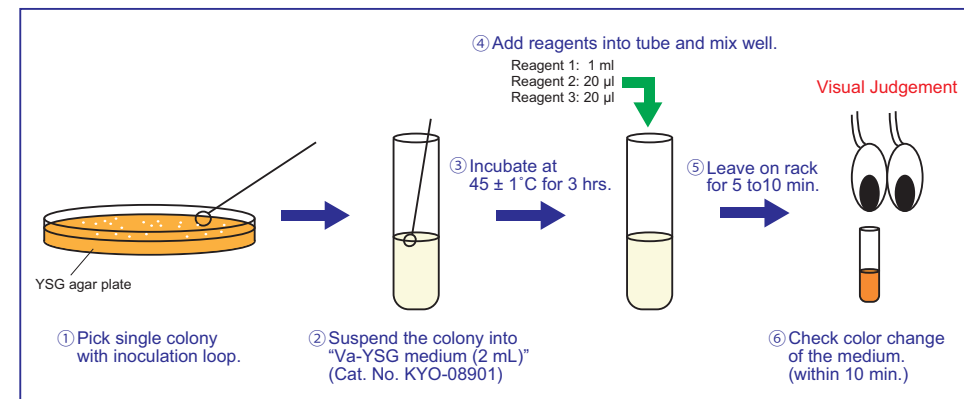
TAB are not destroyed by pasteurization and may remain in final products of fabricated food and beverages. TAB are not known to be harmful to health but are known to degrade the quality of juices and other products by producing guaiacol, causing off-flavor.

Since it is difficult to avoid and detect contamination of TAB, Niwa *et al.* have developed an easy test kit to differentiate *Alicyclobacillus acidoterrestris* with productivity of guaiacol.



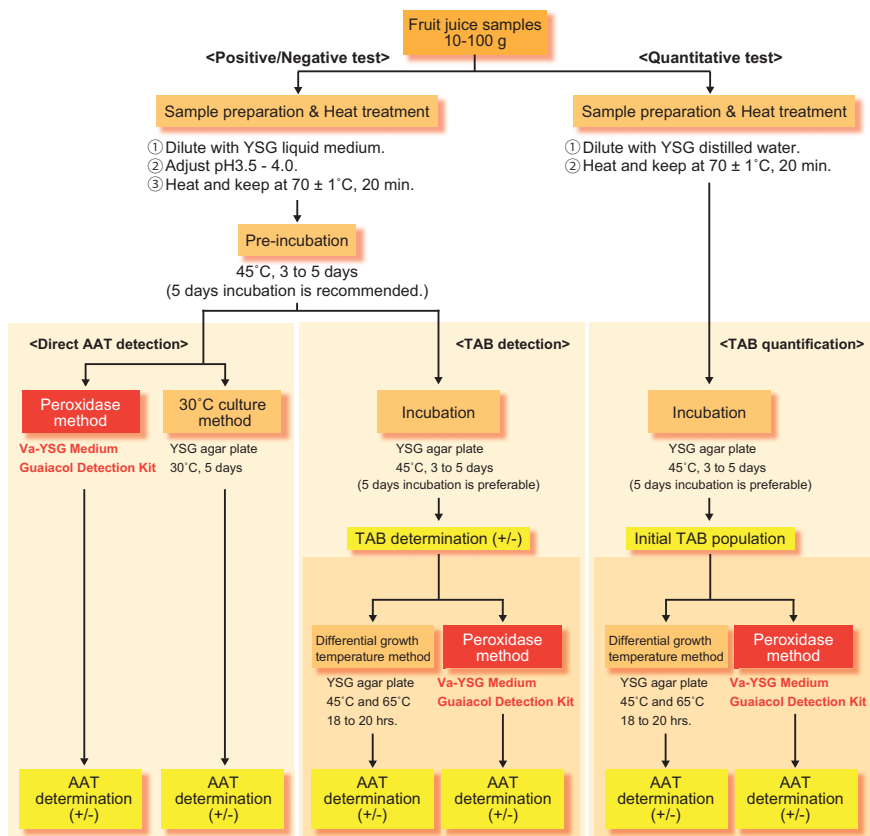
A. acidoterrestris
Kindly provided by Mr. K. Goto. (MITSUI NORIN CO.,LTD.)

Experimental Procedure



Scheme of TAB Test

- Japan Fruit Juice Association -



Example of Results



Brown color indicates contamination of AAT

- ① Negative Control
- ② *A. acidoterrestris* B2067
- ③ *A. acidoterrestris* ATCC49025^T
- ④ *A. acidocaldarius* ATCC27009^T
- ⑤ *A. acidocaldarius* HP2
- ⑥ *A. genomic sp.* P2
- ⑦ *A. genomic sp.* DSM11983

Guaiacol Production of each TAB strain

Guaiacol production	Bacterial species	Strains	Judgement
Negative	<i>Alicyclobacillus</i> genomic sp.	6 DSM strains and 6 isolated strains	- (all 12 strains)
	<i>A. acidocaldarius</i>	6 DSM strains and 6 isolated strains	- (all 12 strains)
	<i>A. hesperidium</i>	3 DSM strains and 4 isolated strains	- (5 strains) / + (2 strains)
	<i>A. cycloheptanicus</i>	3 DSM strains including a type strain	- (all 3 strains)
	Other species	3 strains	- (all 3 strains)
	Positive	<i>A. acidoterrestris</i>	ATCC49025 ^T
DSM2498			+++
DSM3923			+++
DSM3924			+++
OR3			+++
RB1			+++
RB221			+++
RB253			+++
RB346			+++
RB359			+++
TAB-H1			+++
B2065			+++
B2066			+++
B2067		+++	
<i>A. acidiphilus</i>	TA67 ^T	+	
<i>A. herbarius</i>	CP1 ^T	+++	