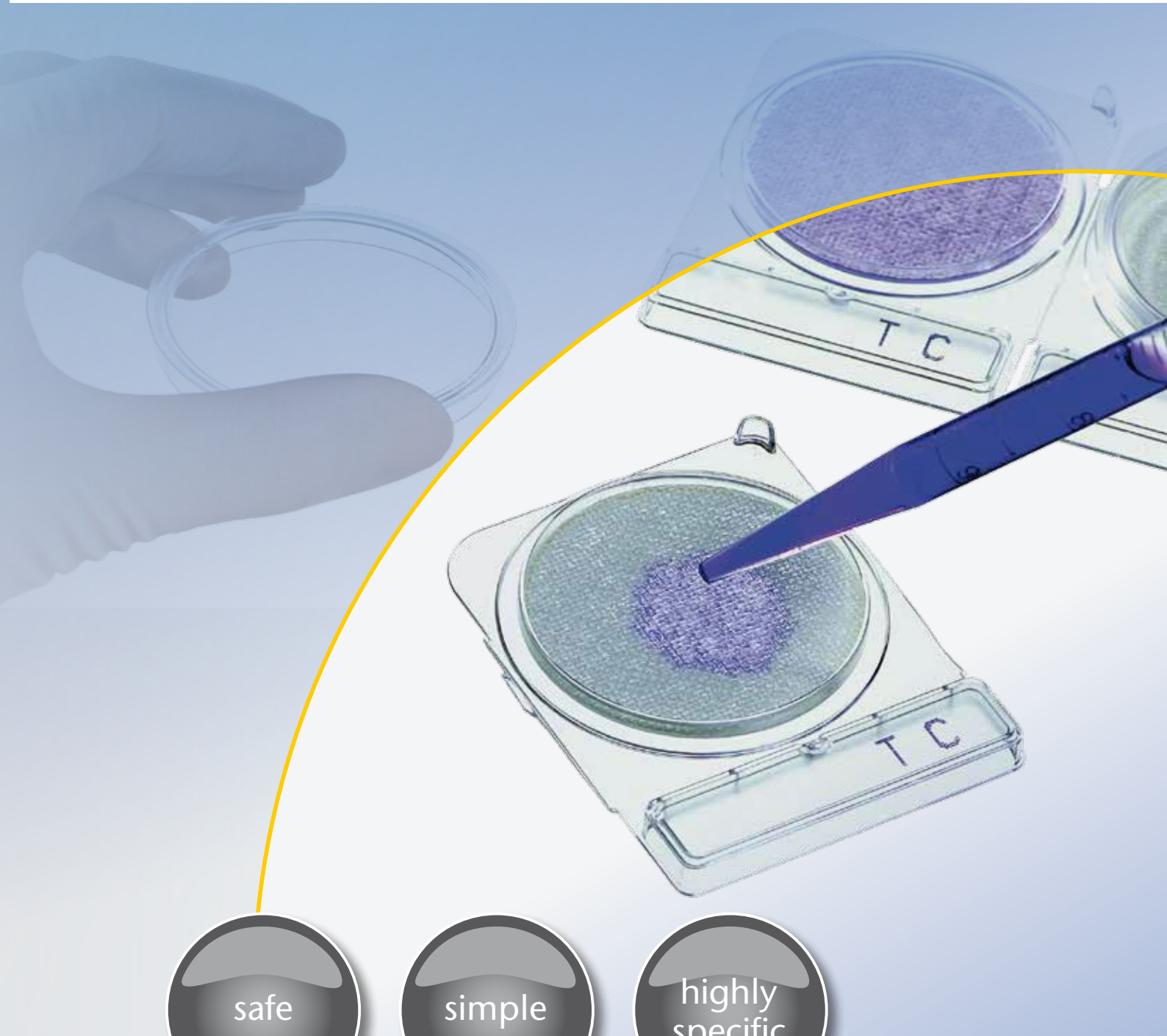




Compact Dry – An easy test method for counting microorganisms



safe

simple

highly specific

● Compact Dry – An easy test method for counting microorganisms

General information

Compact Dry is a ready-to-use test method which helps to reduce the time needed to perform microbial testing. Therefore, it allows maximum productivity by increasing efficiency. The plates can be used to test raw materials as well as finished products like food, beverage, meat, cosmetic or other samples. The Compact Dry plates can also be used as a contact plate for difficult areas using a wet swab system as Promedia ST-25 (Art. No. Z0301, available from R-Biopharm).

Compact Dry is an easy-to-read results test method. Place 1 ml of sample onto the plate, the liquid samples will self-diffuse evenly over the whole plate. Incubate the plates at the temperature specified in the package inserts. The grown colonies are pigmented with different colors, developed by chromogenic substrates and redox indicators. The type of bacteria is identified by its color. For further investigation bacteria can be easily selected.

Compact Dry is also an easy-to-store test method. The plates can be kept at room temperature for up to two years and can be used over an incubation temperature range of 20 - 42 °C.

Compact Dry is a very safe and convenient product. Its rigid structure allows for easy transportation and an unlimited number of units can be stacked safely in an incubator. The risk of contamination of the medium is eliminated by using the covering lid.

Additionally membrane filters can be tested using Compact Dry plates. Filter 100 ml water or any other liquid using an ordinary sterile membrane filter (e.g. Ø 47 mm, 0.45 µm pore size), then pipette 1ml of sterile water into the middle of the Compact Dry plate and place the filter on the Compact Dry plate. The filter should be placed trap side up. Colonies will grow on the filter.

Membrane filter method: procedure for Compact Dry

- Select a suitable Compact Dry Plate (e.g. EC), remove the plate cap and pipette 1 ml of sterile water into the middle of the dry sheet.
- Using sterile tweezers pick up a sterile membrane filter.
- Remove the funnel from a sterilized filtering device and place the sterile membrane filter on the filter grid.
- Set the funnel, pour the sample water into the funnel and filter the sample water under reduced pressure.
- After filtering the sample, wash the inner surface of the funnel with 20 - 30 ml of sterile water and filter it. Repeat the same steps two or three times.
- Detach the funnel and take the membrane filter out with sterilized tweezers. Put the filter on the prepared Compact Dry plate avoiding any bubbles. The trap side has to be up.
- Turn over the capped plate and put in an incubator for incubation under the prescribed condition.

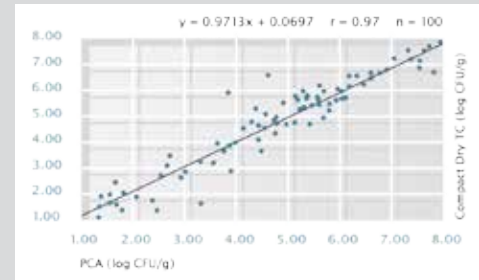
● Compact Dry menu

Compact Dry TC (Total Count)

Compact Dry TC is a medium for total viable bacterial count, which contains nutrient standard agar. The colonies grown on Compact Dry TC are red due to redox indicator tetrazolium salt.

Regression line data from Compact Dry TC method plotted versus the conventional PCA method (standard plate count agar) shows a good correlation per 100 food samples for the population of mesophilic aerobic microorganisms.

Total viable count

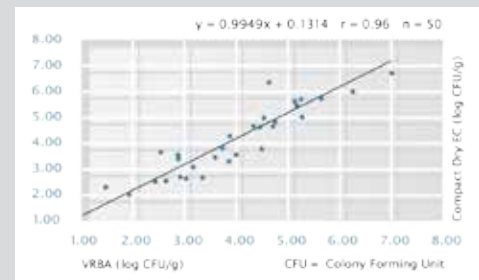


Compact Dry EC (*E. coli* and coliforms) Bacteria form blue and red colonies

Compact Dry EC is a medium for *E. coli* and coliforms. The medium contains two kinds of chromogenic enzyme substrates: Magenta-Gal and X-Gluc. *E. coli* forms blue colonies. The total coliform group count is the sum of both the red and blue colonies.

Regression line data from Compact Dry EC method plotted versus the conventional VRBA method (violet red bile agar) shows a good correlation per 50 food samples for the population of coliforms. Compact Dry EC has gained various approvals (s. table on last side).

E. coli / *K. oxytoca*



Compact Dry CF for coliforms

For the detection of coliforms Compact Dry CF is an easy tool. Coliforms grow with blue/blue green colonies as the recipe contains the chromogenic enzyme substrate X-GAL. The growth of bacteria others than coliforms is mainly inhibited, but in case of growth they form colorless colonies. Compact Dry CF has gained various approvals (s. table on last side).

Klebsiella oxytoca



Pseudomonas aeruginosa



Compact Dry YM for yeast and mold

With Compact Dry YM yeasts and molds can be differentiated by color development. The medium contains the chromogenic enzyme substrate X-Phos which turns blue with many types of yeast. Molds form fluffy colonies with a characteristic color. Antibiotics inhibit the growth of bacteria. The Compact Dry YM allows a very good 3-dimensional growth of yeast and mold. Compact Dry YM has gained various approvals (s. table on last side).

Candida albicans



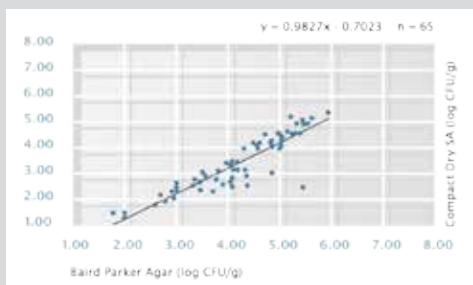
Aspergillus niger



Compact Dry X-SA for *Staphylococcus aureus*

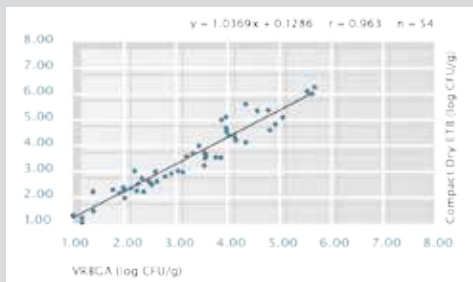
Compact Dry X-SA is a medium used to determine *Staphylococcus aureus* by means of selective growth and differentiation via chromogenic substrates. The medium is based on an improved mannitol-salt agar. During growth *Staphylococcus aureus* converts substrates for acid phosphatase and β -glucosidase into blue colored products. This results in formation of light blue colonies.

Compact Dry X-SA has gained various approvals (s. table on last side). For further information please consider the special Compact Dry X-SA flyer.



Compact Dry ETB for *Enterobacteriaceae*

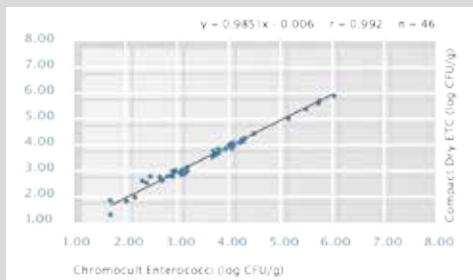
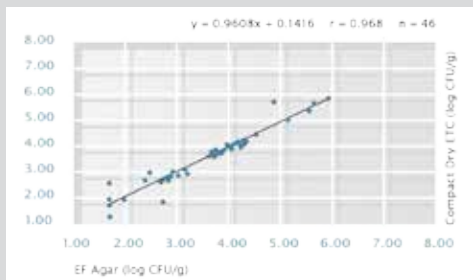
Using Compact Dry ETB it's very easy to detect *Enterobacteriaceae*. The medium contains glucose and selective agents for differentiation and enumeration of *Enterobacteriaceae*. Specific colonies will be almost visible in a reddish purple color. Compact Dry ETB has gained various approvals (s. table on last side).



Compact Dry ETC is a plate for easy detection of *Enterococci* in food and water

Enterococci occur and grow in a variety of fermented foods. The presence of *enterococci* in food products has long been considered as an indication of poor sanitary conditions during production and processing. On the other hand, *enterococci* are specifically used for the fermentation of a variety of foods. It is claimed that *enterococci* play an important role in the development of the organoleptic properties of the fermented foods.

For water, the presence of *enterococci* serves as an indicator of fecal contamination. *Enterococci* in water can only come from human or animal feces. The Compact Dry ETC is based on the usage of X-glucoside (X-Gluc.) and antibiotics as selective agents. *Enterococci* will grow with blue to blue green colonies after incubation for 24 hours at 37° C.



Compact Dry SL for *Salmonella*

Compact Dry SL detects *salmonella* using 20 - 24 hour pre-enrichment cultures.

The plates are based on the combination of three different test principles:

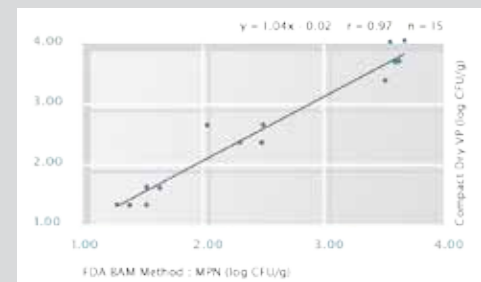
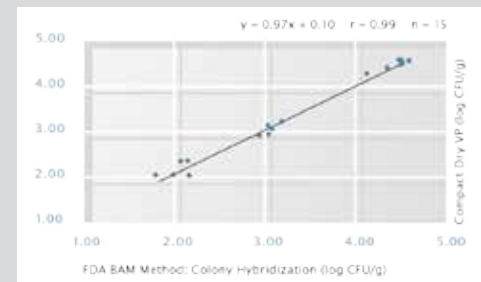
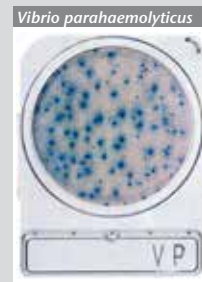
1. Alkalinization of the medium, by *Salmonella*'s lysine decarboxylase ability (the medium color will change from blue-purple to yellow);
2. Greening of the colony, caused by decomposition of chromogenic substrate with a specific enzyme of *Salmonella* (black colonies are generated by hydrogen sulphide producing *Salmonella*);
3. The motility of *Salmonella*.



Compact Dry VP for *Vibrio parahaemolyticus*

Vibrio parahaemolyticus is a bacterium that can cause cholera. *Vibrio parahaemolyticus*-associated gastroenteritis is the infection caused by this organism. *Vibrio parahaemolyticus* naturally inhabits coastal waters and is present in higher concentrations during the summer; it is a halophilic or salt-requiring organism. *Vibrio parahaemolyticus* is found in marine environments, sea foods, and the feces of patients with acute enteritis.

Compact Dry VP can not only easily detect *Vibrio parahaemolyticus*, but also differentiate *Vibrio parahaemolyticus* from other vibrios. The product contains a specific chromogenic substrate for *Vibrio parahaemolyticus* which develops blue/green or blue colonies, whereas other vibrios develop white colonies.



Detection of lactic acid bacteria using Compact Dry TC

For the detection of lactic acid bacteria it is recommended to use Compact Dry TC. Samples should be diluted using sterilized saline and incubated under anaerobic conditions (side). For further information please consider the special Compact Dry X-SA flyer.

● Features and benefits

Compact Dry combines the features and benefits of the traditional plate media with the modern features of dehydrated film media.

This unique combination will shorten your test time and increase your lab efficiency, thus reducing your total costs.

Steps	Criteria	Homemade plates	Prepared plates	Other dehydrated plates	Compact Dry
Preparation and storage	ready to use		●	●	●
	long shelf life at RT				●
	small size (for storage and disposal)			●	●
Inoculation (simple and fast)	liquid samples			●	●
	surfaces			●	●
Incubation	small size			●	●
	100% sterile	●	●	●	●
	stackable	●	●	●	●
	no direct contact of the medium to incubator surfaces				●
Reading and interpretation	easy counting (chromogenic)		●	●	●
	easy picking and cloning	●	●		●
Validation	standardization of the production		●	●	●
	validation/approvals	●	●	●	●

● Product overview

Product	Art. No.	Packaging	Application	Incubation time	Incubation temperature
Compact Dry TCC	HS7311	100 plates	Total count in tea products	48 hours	35 ± 2 °C
	HS7312	40 plates			
Compact Dry TC	HS8771	100 plates	Total Count	48 hours	35 ± 2 °C* (20 - 42 °C)
	HS8772	40 plates			
Compact Dry EC	HS8781	100 plates	<i>E. coli</i> and coliforms	24 hours	35 ± 2 °C
	HS8782	40 plates			
Compact Dry CF	HS8791	100 plates	Coliforms	18 - 24 hours	35 ± 2 °C; 40 - 42 °C for fecal coliforms
	HS8792	40 plates			
Compact Dry YM	HS8801	100 plates	Yeast and mould	3 - 7 days	25 - 30 °C
	HS8802	40 plates			
Compact Dry LS	HS8811	100 plates	<i>Listeria spp.</i>	24 hours	35 - 37 °C
	HS8812	40 plates			
Compact Dry VP	HS8821	100 plates	<i>Vibrio parahaemolyticus</i>	18 - 24 hours	35 - 37 °C
	HS8822	40 plates			
Compact Dry SL	HS9401	100 plates	<i>Salmonella</i>	20 - 24 hours	41 - 43 °C
	HS9402	40 plates			
Compact Dry ETB	HS9431	100 plates	<i>Enterobacteriaceae</i>	24 - 48 hours	35 - 37 °C
	HS9432	40 plates			
Compact Dry ETC	HS9461	100 plates	Enterococci	20 - 24 hours	35 ± 2 °C
	HS9462	40 plates			
Compact Dry X-SA	HS9621	100 plates	<i>Staphylococcus aureus</i>	24 hours	35 - 37 °C
	HS9622	40 plates			
Compact Dry X-BC	HS9721	100 plates	<i>Bacillus cereus</i>	24 hours	30 °C
	HS9722	40 plates			

* Please use the incubation temperature/time according to the legal specification of each country food analysis regulations.

● Approvals

Overview

Product name	Validation (Ref. No.)		
	MicroVal	NordVal	AOAC-RI
Compact Dry TC	RQA2007LR01	033	010404
Compact Dry EC	MV0806-004LR	036	110402
Compact Dry CF	MV0806-003LR	035	110401
Compact Dry YM	RQA2008LR10	043	100401
Compact Dry LS	---	---	---
Compact Dry VP	---	---	---
Compact Dry SL	---	---	---
Compact Dry ETB	MV0806-002LR	034	---
Compact Dry XSA	2008LR14	042	081001
Compact Dry XBC	Pending	Pending	---
Compact Dry ETC	---	---	---
Compact Dry TCC	---	---	---

MicroVal and NordVal approvals are according to the international standard “Microbiology of food and animal feed – Method validation”; EN ISO 16140.

Compact Dry TC also is approved by:

- Servico Publico Federal; Minsterio da agricultura, pecuaria e ae Astecimento; Brazil No. AUP/CGI/DIPOA No. 0453/2006
- Microbiological Methods Committee; Microbiology Evaluation Division; Bureau of Microbial Hazards, Food Directorate, Health Products and Food Branch, Health Canada; Ottawa, Ontario K1A 0L2

Compact Dry plates are produced at an ISO 9001 certified production site.

References

Hasan Aycicek, Utku Oguz, Koray Karci (2006)

Determination of total aerobic and indicator bacteria on some raw eaten vegetables from wholesalers in Ankara, Turkey. *Int. J. Hyg. Environ.-Health* 209: 197 – 201

Nissui Pharmaceutical granted PTM status for Compact Dry TC, Inside Laboratory Management; AOAC, July 2004: 19 – 22

Bachmann, B., Lüthi, M. (2003)

Evaluation mikrobiologischer Methoden zur Prüfung von Trinkwasser im Feld für Katastropheneinsätze. *Mitt. Lebensm. Hyg.* 94: 579 – 593

Ellis P., Kirchof G. and Meldrum R. (2003)

Evaluation of the Compact Dry SL method for the detection of Salmonella in spiked food samples. Poster presentation at HPA 1st Scientific Conference, University of Warwick, September 2003.

Ellis, P. and Meldrum R. (2002)

Comparison of the Compact Dry TC and 3M Petrifilm ACP dry sheet media methods with the spiral plate method for the examination of randomly selected foods for aerobic colony count. *J. Food Prot.* 65: 423 – 425

Ellis P and Meldrum RJ (2001)

Evaluation of dryfilm methods for aerobic colony counts. Poster presentation at PHLs 26th Scientific Conference, University of Warwick, September 2001

Mizuochi, S. and Kodaka, H. (2000)

Evaluation of dry sheet medium culture plate (Compact Dry TC) method for determining numbers of bacteria in food samples. *J. Food Prot.* 63: 665 – 667

Mizuochi, S., Kamiya, H., Kodaka, H., Sengoku, H., and Horigome, K. Compact Dry for the Enumeration of Bacteria in Food. ASM 1999 General Meeting, Chicago 1999

Kodaka, H. and Ishikawa, M. (1995)

Evaluation of new medium with chromogenic substrates for members of the family Entero-bacteriaceae in urine sample. *J. Clin. Microbiol.* 33: 199 – 201.

Curiale, M.S. and Sons, T., et. al (1991)

Dry rehydratable film for enumeration of total coliforms and escherichia coli in foods: Collaborative study. *J. Assoc. Off. Anal. Chem.* 74: 635 – 648