

# \* Compact Dry™ ETB

Simple and Easy Dry Medium for *Enterobacteriaceae*

## \* Background

Enumeration of *Enterobacteriaceae* in foodstuffs and environment helps to monitor the degree of cleanness as well as their sanitary quality. Traditional spread plate, pour and MPN culture methods have been widely used to determine the microbial counts. These methods require much media preparation time. To reduce the analytical time and make it possible for a to perform the bacteria culture test without difficulty, has successfully developed a device based on new concept and technology.

CompactDry™ ETB is a simplified medium to determine number of *Enterobacteriaceae* by the combination of selective agents and pH indicator.

## Features and Benefits

- 1) Small and compact plate: Need only small physical spaces for storing, testing and incubating.
- 2) Ready to use and portable plate: No need to prepare medium, which eliminates waste of medium as well as apparatus to prepare the medium. Good for an emergency and a field test.
- 3) Sample diffuses automatically and evenly into a plate.
- 4) Easy to store: 16 months shelf life at room temperature.
- 5) Measurable after Incubation for 24 hours.
- 6) Red/red-purple colonies for *Enterobacteriaceae* are observed, and fishing of colonies is easy.
- 7) Good correlation with Pour Plate method: Maintain the continuity of data accumulated.

## Certification by third parties

The CompactDry™ ETB has been compared to ISO 21528-2:2014 and certified by the AOAC Research Institute Performance Tested Methods™ Program (Certificate No. 012001) for enumeration of *Enterobacteriaceae* in raw ground beef, cooked chicken, lettuce (pre-washed, bagged shredded iceberg), frozen fish (cod fillets), instant nonfat dry milk powder and pasteurized milk (2% fat), pasteurized cream, cream cheese, ready to cook fresh vegetables, vegetable juice, raw ground pork, raw bacon, fresh cooked prawns, fish paté, sandwich and cooked chilled rice.

Microval validation certified method in compliance with ISO 16140-2:2016 in comparison to ISO 21528-2:2014.

## \* Test Kit Components

- 1) CompactDry™ ETB Plates

## Additional Reagents and Supplies Required, Not Provided

- 1) Maximum recovery diluent (MRD)
- 2) Filtered sample bags

## Apparatus

- 1) Lab paddle blender, blender, or vortex mixer for homogenizing sample
- 2) Pipets – 1 mL
- 3) Incubator –37 ± 1°

## Operating Procedure

### Preparation of specimen

- 1) Viable count in solid foodstuffs:  
Weigh a 10-g test portion and add 90 mL Maximum Recovery Diluent (MRD). Homogenize in a Stomacher or blender for 2 min ±15 sec. For milk powder, weigh a 10 g test portion and add to 90 mL MRD (pre-warmed to 45 ± 1 °C). Slowly swirl and shake until dissolved.
- 2) Viable count in water or liquid foodstuffs:  
Use without dilution, dilute 1 mL in 9 mL MRD, or dilute further of viable count is expected to be >150 CFU/mL. Vortex to mix.
- 3) Viable count in swab test specimen (not included in AOAC validation):  
Drop 1 ml of wiping solution (to be diluted if necessary), which is obtained from a cotton swab, in the middle of a dry sheet. It is recommended to use Easy Wiping Kit Swab Test ST-25PBS (Code 06698) available as an optional kit.

### Direction

- 1) Open aluminum pouch and remove a set of 4 plates.
- 2) Detach necessary number of plates by bending up and down while pressing the lid. Use a set of four connected plates when serial dilution measuring is intended.
- 3) Remove lid from plate, pipette 1 mL of sample in the middle of the dry sheet and replace cap. Sample diffuses automatically and evenly over the entire sheet (20 cm<sup>2</sup>) to transform it into a gel.
- 4) Write the appropriate sample information in the memorandum section. Invert the capped plate and place in the incubator at 37 ± 1 °C for 24 ± 2 h.
- 5) From the backside of the plate, count the number of red/red-purple colonies in the medium. White paper placed under the plate can make colony counting easier.

## Precaution for use

- 1) During inoculation, do not touch the surface of medium and/or tip of dropper, and be careful to avoid any contamination by falling microorganism.
- 2) During incubation, keep cap of CompactDry™ tight to avoid any possible dehydration.
- 3) Use of filtered stomacher bags is recommended to eliminate risks of carryover of tiny pieces of foodstuffs onto the surface of the medium.
- 4) Dilute sample with MRD to a level of contamination of 1 - 150 cfu/plate.
- 5) If more than 10<sup>4</sup> cfu are inoculated onto a plate, no isolated colonies will be formed, and the entire plate may become colored.
- 6) If the nature of sample affects the reaction of the medium, inoculate the sample only after the factor has been eliminated by means such as dilution, pH adjustment, or others. This may include samples with high viscosity, deep color, or pH >9.0 or <5.0.
- \*7) If a diluent with high buffering capacity (e.g. buffered peptone water (BPW)) is used or this product, the coloration of colonies may be weakened. Please use the diluents

such as saline solution, phosphate buffered solution, or peptone salt solution. For surface sampling, it is recommended to use Easy Wiping Kit Swab Test ST-25PBS (Code 06698) available as an optional kit.

## Interpretation

*Enterobacteriaceae* form red/red-purple colonies of 1-2 mm in diameter by pH indicator contained in the medium.

## Precaution for interpretation

- 1) The plate size of CompactDry™ ETB is 20 cm<sup>2</sup>, and the back of container has a carved grid of 1 cm x 1 cm to make colony counting easier. When it is difficult to count the colonies due to a great large number of colonies grown in the medium, the total bacterial number can be obtained by multiplying 20 by an average number of colonies per grid (1 cm x 1 cm) calculated from representative grids.
- 2) Though some bacteria other than *Enterobacteriaceae* may also grow and form white and/or yellow colonies in this plate, only red/red-purple colonies should be counted.
- 3) Certain *Enterobacteriaceae* may grow quickly and alkalize the medium. As a result, red/red-purple colonies may get discolored and form yellow colonies. If needed, plates may be counted at 18 h.
- 4) Colonies of certain *Enterobacteriaceae* may be diffused. In such cases the dark point in the center of each diffused colony should be counted.
- \* 5) CompactDry™ ETB may not detect certain strains of *Serratia*, *Raoultella*, and *Yersinia*. CompactDry™ ETB has been shown to detect *Pasteurella bettyae*.

## Warning and Direction for Use

### 1. General precautions

- 1) Read and follow precisely the warnings and directions for use described in the package insert and/or label.
- 2) Do not use the product after its expiration date. The quality of the product is not guaranteed after its shelf life.
- 3) Do not use product that contains any foreign materials, is discolored or dehydrated, or has a damaged container.
- 4) Use plates as soon as possible after opening. Any unused plates should be returned to the aluminum pouch sealed with tape to avoid light and moisture, and stored at room temperature.
- 5) Cap tightly after inoculation to avoid dehydration of gelled medium.

### 2. Precautions Health and Safety

- 1) Wash immediately with water medium or reagent comes into contact with eyes or mouth. Consult a physician.
- 2) Manipulations with microorganisms involve certain risks of laboratory-acquired infections. Carry out manipulations under supervision of trained laboratory personnel with level 2 biohazard protection measures.
- 3) Treat laboratory equipment or medium that comes in contact with the sample as infectious and sterilize appropriately.

### 3. Precautions for disposal of waste

Sterilize any medium, reagent or materials by autoclaving or boiling after use, and then dispose as industrial waste according to local laws and regulations for disposal of such material.

## \* 4. Limitation of Warranties

If CompactDry™ ETB plate has proven to be defective due to Shimadzu Diagnostics's negligence, Shimadzu Diagnostics or Shimadzu Diagnostics's authorized distributor will replace or refund at the purchase price of the plate.

## Storage and Shelf life

### Storage

Store at room temperature (1-30°C).

### Shelf life

Sixteen (16) months after manufacturing.

Shelf life is printed on the labels of outer box, aluminum bag.

## \* Package

Compact Dry™ ETB 40 plates	Code 06535
Compact Dry™ ETB 240 plates (Made-to-order)	Code 06536

## \* Further information

### Customer Support Section,

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