

# CompactDry™ ETC

Simple and Easy Dry Media for *Enterococcus*

## \*Background

It is important to detect and determine the bacterial number in foodstuffs and the environment to monitor the degree of cleanliness as well as their sanitary safety. Mixing and dilution culture method has been widely used to determine the microbial count. The method requires much time and complicated operations such as preparation of hot agar, mixing and dilution uniformly and/or smearing. To reduce the operation time and make it easier to perform the bacteria culture test, Shimadzu Diagnostics has successfully developed a new device based on new concept and technology.

CompactDry™ ETC is a simplified medium to determine *Enterococcus* species, including *E. avium*, *E. casseliflavus*, *E. durans*, *E. faecalis*, *E. faecium*, *E. gallinarum*, *E. haemoperoxidus*, *E. hirae*, *E. malodoratus*, *E. mundtii*, *E. pseudoavium*, and *E. thailandicus*, by the combination of selective agents and chromogenic substrates.

## \*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: 18 month shelf life at 1-30°C.
- 5) Measurable after incubation for 24 hours.
- 6) Blue/blue green colonies for *Enterococcus* species are observed, and picking of colonies is easy.
- 7) Good correlation with Spread Plate and MPN methods: Maintain the continuity of data accumulated.

## \*Intended Use

This product is intended for use by microbiologists for the enumeration of *Enterococcus* in food and related samples.

## \*Certification by AOAC

The CompactDry™ ETC has been compared to Nordic Committee on Food Analysis (NMKL) reference method 68 and certified by the AOAC Research Institute *Performance Tested Methods*™ Program (Certificate No. 111902) for enumeration of *Enterococcus* spp. in frozen ground beef patties, raw beef, fresh cooked prawns, tuna paté, cream, custard, lettuce, parsley, pasta salad, and egg salad sandwiches.

## Test Kit Components

- 1) CompactDry™ ETC Plates

## Additional Reagents and Supplies Required, Not Provided

- 1) Maximum recovery diluent (MRD) – Prepare according to NMKL 68 or source commercially
- 2) Filtered Stomacher bags

## Apparatus

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

## Operating Procedure

### Preparation of sample

- 1) Bacterial number in solid foodstuffs:  
Add buffering solution to the sample, and homogenize using for 1 min. Drop 1 ml of specimen (to be further diluted if necessary) in the middle of a dry sheet of CompactDry.
- 2) Bacterial number in water or liquid foodstuffs:  
Drop 1 ml of specimen (to be diluted if necessary) in the middle of a dry sheet.
- 3) Bacterial number in swab test specimen:  
Drop 1 ml of wiping solution (to be diluted if necessary), obtained from a cotton swab, in the middle of a dry sheet. It is recommended to use CompactDry Swab PBS (450002-PBS-0500) available as an optional kit.

### Directions

- 1) Open aluminum pouch, and remove a set of 4 plates.
- 2) Detach the number of plates needed by bending up and down while pressing the lid. Alternatively, use a set of 4 connected plates for serial dilutions of one sample.
- 3) Remove the lid of the plate, and drop 1 ml of specimen in the middle of a dry sheet. The sample diffuses automatically and evenly over the sheet (a medium size of 20 cm<sup>2</sup>) and rehydrates the gel.
- 4) Replace the lid of the plate, turn over the capped plate, and then incubate for 20 - 24 hours at 37 ± 1 °C.
- 5) Count blue/blue green colonies for *Enterococcus* species. White paper placed under the plate can be useful for counting.

### 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 lid of CompactDry tight to avoid any possible dehydration.
- 3) It is recommended to use a stomacher bag with filter to eliminate risks of carry-over of tiny pieces of foodstuffs into the surface of the medium.
- 4) Specimen should be diluted by buffer solution to the level of concentration of less than 200 CFU/plate.
- 5) If bacteria of more than 10<sup>4</sup> CFU are inoculated in a plate, no independent colonies will be formed, and the whole medium will turn blue.

- 6) Specimens with high viscosity, deep color, and too high or too low pH may affect results. The specimen should be analyzed only after the cause has been eliminated by dilution, buffering, or other means.

### Interpretation

*Enterococcus* species forms blue/blue green colonies of 1-2 mm in diameter by chromogens contained in a medium

### Precaution for interpretation

- 1) The plate size of the CompactDry ETC plate is 20 cm<sup>2</sup>, and the back of plate 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 large number of colonies grown in the medium, the total bacterial number can be obtained by multiplying the average number of colonies from representative grids (1 cm x 1 cm) by 20. The plate count should be adjusted for the dilution factor.
- 2) CompactDry ETC shows equivalent performance to the reference method, NMKL Method 68, 5th edition 2011. *Lactobacillus gassari* can cause false positive results.

### \* Warning and Direction for Use

#### 1. General precautions

- 1) Read and precisely follow 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™ ETC 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

Eighteen (18) months after manufacturing.  
Shelf life is printed on the labels of outer box, aluminum pouch.

### Package

CompactDry™ ETC	40 plates
CompactDry™ ETC	100 plates

Code HS9462
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### \* Further information

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