

# CompactDry™ TCR

Simple and Easy Dry Medium for aerobic counts (Rapid type)

## \*Background

It is important to detect and measure the aerobic counts in foodstuffs and the food environment to monitor the degree of cleanliness as well as sanitary safety. The pour plate method has been widely used to determine microbial counts. The pour plate method is time consuming and complicated, requiring operations such as preparation of hot agar maintained at 45 - 50°C, and uniform mixing and dilution. To save operator time and make it possible for anyone to perform the microbial count test without difficulty, Shimadzu Diagnostics Corporation developed the CompactDry™ based on a new concept and technology applicable to the food industry. CompactDry™ requires a simple and easy manipulation to add a drop of specimen on the device.

CompactDry™ TCR is specially formatted to allow most microorganisms to grow more rapidly than the standard CompactDry™ TC.

## \* 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 the waste of medium as well as the apparatus to prepare the medium. Good for emergency and field testing.
- 3) Sample diffuses automatically and evenly into the plate: No need to mix and dilute after sampling.
- 4) Dried plate with 18 month shelf life at room temperature: Easy to store. Once a liquid sample is added, the dry coated medium transforms to gel and the plate is ready to incubate.
- 5) Clear color development by redox indicator: Easy to read the results. Isolated colonies can be subcultured individually to other media.
- 6) Good correlation with Pour Plate method: Maintain the continuity of data accumulated.

## \* Intended Use

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

## \*Certification by AOAC

The CompactDry™ TCR has been compared to FSIS MLG Chapter 3.02 and certified by the AOAC Research Institute *Performance Tested Methods*™ Program (Certificate No. 082201) for enumeration of aerobic mesophilic counts in raw ground beef, raw ground pork, raw pork and raw chicken breast, and compared to FDA BAM Chapter 3 and certified in raw shrimp, raw cod, bagged pre-washed shredded iceberg lettuce and bagged pre-washed mixed lettuce and vegetables. And it also has been compared to APHA SMEDP Chapter 6 and certified in pasteurized whole milk, nonfat dry milk, and pasteurized heavy cream.

## \*Test Kit Components

- 1) CompactDry™ TCR Plates

## Additional Reagents and Supplies Required, Not Provided

- 1) Butterfield's phosphate-buffered diluent (BPBD) – Prepare according to FDA BAM R11
- 2) Filtered Stomacher bags

## Apparatus

- 1) Blender or Stomacher™ or equivalent for homogenizing sample
- 2) Pipets – 1 mL
- 3) Incubator – 35 ± 1°C (all claimed matrices except dairy products)  
35 ± 1°C or 32 ± 1°C (pasteurized whole milk, nonfat dry milk and heavy cream)

## \* Operating Procedure

### Preparation of specimen

- 1) Prepare appropriate diluent: Butterfield's phosphate-buffered diluent (BPBD). Autoclave for sterilization.
- 2) Viable count in solid foodstuffs (all claimed matrices except dairy products)  
Weigh 50 g of sample and add 450 mL BPBD to the sample. Homogenize by blender for 2 min.
- 3) Viable count in solid foodstuffs (nonfat dry milk)  
Weigh 11 g of sample and add 99 mL BPBD to the sample. Homogenize by blender for 2 min.
- 4) Viable count in liquid foodstuffs (pasteurized whole milk and heavy cream)  
Weigh 11 mL of sample and add 99 mL BPBD to the sample. Homogenize by blender for 2 min.
- 5) Viable count in swab test sample (not included in AOAC PTM certification)  
Use wiping solution (without dilution or diluted if necessary in diluent) obtained from the cotton swab. It is recommended to use CompactDry Swab PBS (450002-PBS-0500) available as an optional kit.

### \* Direction for CompactDry™ TCR

- 1) Open aluminum pouch, and take out a set of 4 plates.
- 2) Detach necessary number of plate(s) from a set of four by bending up and down while pressing the lid. Use a set of four plates being connected when serial dilution measuring is intended.
- 3) Remove the lid from plate, pipette 1 mL of sample (to be diluted further if necessary) in the middle of the dry sheet, and replace the lid. Specimen diffuses automatically and evenly over the entire sheet (total medium of 20 cm<sup>2</sup>) to transform it into a gel within seconds.
- 4) Write the appropriate sample information in the memorandum section. Invert the lidded plate lid and place in incubator at 35 ± 1°C for all claimed matrices except dairy products, or 35 ± 1°C or 32 ± 1°C for pasteurized whole milk, nonfat dry milk and heavy cream for 48 ± 3 h. In case of rapid measurement, incubate 35 ± 1°C for all claimed matrices except dairy products, or 35 ± 1°C or 32 ± 1°C for pasteurized whole milk, nonfat dry milk and heavy cream for 24 ± 2 h.
- 5) From the backside of the plate, count the number of colonies (colored and colorless) in the medium. White paper placed under the plate can make colony counting easier. For large numbers of colonies, use the grids carved on the backside consisting of 1 cm x 1 cm, or 0.5 cm x 0.5 cm, at the four corners.

- 6) Enumeration range of CompactDry™ TCR is 1–300 cfu/plate. Specimen should be diluted in buffer to obtain a concentration level less than 300 cfu/plate.

## Precaution for use

- 1) Do not use CompactDry™ TCR for human and animal diagnosis.
- 2) To avoid microbial contamination, do not touch the surface of the dry sheet medium during inoculation.
- 3) During incubation, keep lid tight to avoid any possible dehydration.
- 4) Use of filtered stomacher bags is recommended to eliminate risks of carryover of tiny pieces of foodstuffs onto the surface of the medium.
- 5) If the nature of the 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 other. This may include samples with high viscosity, that are colored, that react with the redox indicator, or that have too high or too low pH.

## Interpretation

The medium consists of non-selective medium and the redox indicator. Colonies grown on CompactDry™ TCR are almost all red colored.

## \* Precaution for interpretation

- 1) Since some microorganisms may not reduce the redox indicator to develop red/pink color, colonies may develop on CompactDry™ TCR that are not necessarily red. All colonies should be counted.
- 2) If more than 10<sup>4</sup> cfu/mL were inoculated onto a plate, no distinguishable colored colonies will form and the entire plate will become colored.
- 3) The full plate size is 20 cm<sup>2</sup>. The backside contains carved grids of 1 cm x 1 cm and 0.5 cm x 0.5 cm to make colony counting easier. If large numbers of colonies are present on the medium, the aerobic counts can be obtained by averaging the number of colonies per large grid (1 cm x 1 cm), counted from several grids, and multiplying by 20. Alternatively, the aerobic counts can be obtained by averaging the number of colonies per small grid (0.5 cm x 0.5 cm), counted from several grids, and multiplying by 80.

## \* 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. Quality of the product is not warranted 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. Return any unused plates to the aluminum pouch and seal with tape to avoid light and moisture. CompactDry™ TCR (for aerobic counts) is sensitive to light, which affects the color development of colonies.
- 5) Lid tightly after inoculation to avoid dehydration of gelled medium.

### \* 2. Safety Precautions

- 1) If medium or reagent comes into contact with eyes or mouth, immediately wash with water and consult a physician.
- 2) Manipulations with microorganisms involve certain risks of laboratory acquired infections. Manipulations should be carried out under the supervision of trained laboratory personnel with biohazard protection measures.
- 3) Treat any laboratory equipment or medium that comes into contact with the specimen 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. User Responsibility

- 1) It is user's responsibility in selecting any test method to evaluate a sufficient number of samples with particular foods and microbial challenges to satisfy the user that the chosen test method meets the user's criteria.
- 2) It is the user's responsibility to determine that any test methods and results meet its customers' or suppliers' requirements. The user must train its personnel in proper testing techniques.
- 3) It is the user's responsibility to validate the performance of this method for use with any non-certified matrix.

### \* 5. Limitation of Warranties

CompactDry™ plates are manufactured at ISO 9001:2015 facility. If any CompactDry™ plate is proven to be defective by fault of the manufacturer or its authorized distributors, they may replace or, at their discretion, refund the purchase price of any plate. These are the exclusive remedies.

## Storage and Shelf life

Storage: Keep at room temperature (1 – 30°C)

Shelf life: Eighteen (18) months after manufacturing.

Expiration date is printed on outer box label and aluminum pouch label.

## Package

CompactDry™ TCR	40 plates
CompactDry™ TCR	240 plates
CompactDry™ TCR	1400 plates

Code 54069-TCR-0040
Code 54069-TCR-0240
Code 54069-TCR-1400

## Further information

### Customer Support Section

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