CompactDry™ X-SA

Simple and Easy Dry Medium for *Staphylococcus aureus*

*Background

It is important to detect and determine the bacterial number in foodstuffs and environment to monitor the degree of cleanness 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 operate time and make it possible for anyone to perform the bacteria culture test without difficulty, Shimadzu Diagnostics Corporation has successfully developed a new device based on new concept and technology.

CompactDry™ X-SA is a simplified medium to determine *S. aureus* 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: 21 month shelf life at room temperature.
5) Measurable after Incubation for 24 hours.
6) Light blue/blue colonies for *S. aureus* are observed, and fishing of colonies is easy.
7) Good correlation with Direct Plate Count Method : maintain the continuity of data accumulated.

*Intended Use

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

*Operating Procedure

Preparation of specimen

1) Prepare appropriate diluent such as butterfield's buffered phosphate diluent or saline solution. Maximum Recovery Diluent was used for AOAC PTM certification.
2) Viable count in solid foodstuffs
   Weigh 10g solid sample and add 90mL diluent to the sample. Homogenize this mixed sample by a blender. Pipette 1mL of homogenized specimen (to be further diluted if necessary) in the middle of dry sheet of CompactDry™ X-SA.
3) Viable count in water or liquid foodstuffs
   Pipette 1mL of liquid sample (to be diluted if necessary) in the middle of dry sheet of CompactDry™ X-SA.
4) Viable count in swab test sample (not included in AOAC validation)
   Inoculate 1mL of wiping solution (to be diluted if necessary), which is obtained from cotton swab, in the middle of dry sheet of CompactDry™ X-SA. It is recommended to use CompactDry Swab PBS (450002-PBS-0500) available as an optional kit.

Direction

1) Open aluminum pouch, and take out a set of 4 plates.
2) Detach the quantity you need from a set of four by bending up and down while pressing the lid. Use a set of four plates being connected when a series of diluted samples is inoculated.
3) Take off the lid of the plate, and drop 1 ml of specimen in the middle of a dry sheet. Specimen diffuses automatically and evenly into all over the sheet (a medium size of 20 cm^2) to transform it into gel.
4) Turn over the capped plate after putting the lid again, and then incubate for 24 $\pm$ 2 hours at 37$\pm$ 1 °C.
5) Count Light blue/blue colonies for *S. aureus*. White paper placed under the plate can be useful for counting.

Precaution for use

1) CompactDry™ X-SA was validated with frozen prawns, cooked ham, raw fresh cow's milk, pastries containing fresh cream, and chilled fresh pasta according to the AOAC Research Institute's Performance Tested Method℠ (PTM) program.
2) CompactDry™ X-SA may be applicable for other food materials, products and related matrices although the validation program of PTM is not performed.
3) Do not use CompactDry™ X-SA for human and animal diagnosis.
4) During inoculation, do not touch the surface of medium, and be careful to avoid any contamination by falling microorganism.
5) During incubation, keep cap tight of CompactDry™ to avoid any possible dehydration.
6) 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.
7) Detection limit of CompactDry™ X-SA is between 1 – 150 cfu/plate. Specimen should be diluted by the appropriate diluent to the level of concentration of less than 150 cfu/plate.
8) If bacteria more than 10^4 cfu were inoculated on a plate, no colonies are formed, and no colored colonies eventually are appeared on the plate but all plate sheets becomes seemingly colored.
9) If the nature of sample does affect the reaction of the medium, inoculate the sample only after the factor is eliminated by means of such as dilution and others.
   For instance; samples such as high viscosity, colored, reacted with enzyme substrate, and too high or too low pH.

Interpretation

Staphylococcus aureus forms light blue/blue colonies of 1~2 mm in diameter by chromgens contained in a medium.

* Precaution for interpretation

1) The plate size of CompactDry™ X-SA is 20 cm^2, and the back of container has a carved grid of 1cm x 1cm 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 (1cm x 1cm) calculated from representative grids.
2) Though some bacteria other than *S. aureus* may also grow and form white and/or red purple colonies in this plate, only light blue/blue colonies should be counted.
3) It is known that certain bacteria other than *S. aureus*, and some of them (genus *Bacillus* in particular) may grow and form light blue/blue colonies. It is easy, however, to differentiate them from *S. aureus*, because almost all of them form relatively large, matte and flat colonies only.

* Warning and Direction for Use

1. General precautions

1) Read and follow precisely the warning and direction for use described in the package insert and/or label.
2) Do not use the product after its expiry date. The quality of expired products is not warranted.
3) Do not use the product that contains any foreign materials, discolored or dehydrated, or its container is damaged.
4) After opening the aluminum pouch, any unused plates should be put back into the aluminum pouch to be sealed with tape to avoid light and moisture, and use up as soon as possible.

2. Precautions for danger

1) In case that media or reagents touched eyes or mouth, immediately wash with a plenty of water, and consult a physician.
2) Manipulations with microorganisms always involve certain risks of laboratory - acquired infections. Manipulations should be practiced under the supervision of skillful specialist with biohazard protection measures.
3) Any laboratory equipment and medium that touched with specimen should be regarded as infectious in the laboratory.

3. Precautions for disposal of waste

Any media, reagents and materials must be sterilized by autoclaving or boiling water after use, and then disposed as industrial waste products according to the Law on Waste Disposal and Cleaning. Also follow to local laws and regulations relate to dispose.

4. Limitation of Warranties

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

Storage and Shelf life

Storage

Keep at room temperature (1~30 °C)

Shelf life

Twenty-one (21) months after manufacturing.
Shelf life is printed on the labels of outer box, aluminum bag.

Package

CompactDry™ X-SA	40 plates	Code HS9622
CompactDry™ X-SA	100 plates	Code HS9621

* Further information

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