

Technical Data Sheet

DCA (Differential Clostridial Agar) acc. to WEENK *et al.*

For the enumeration of sulfite-reducing clostridia in dried foods.

1102590500

Mode of Action

The DCA medium consists of a nutritionally rich base medium, including starch to promote spore germination. Resazurin is added as a redox indicator, turning red at high redox potential, indicating aerobic conditions. Sulfite and an iron source are added as indicators. Sulfite-reducing clostridia produces sulfide from sulfite, which gives a black precipitate with the iron present in the medium. Sulfite-reducing clostridia are enumerated as black colonies.

Typical Composition (g/L)

Peptone from casein	5.0
Peptone from meat	5.0
Meat extract	8.0
Starch	1.0
D(+)glucose	1.0
Yeast extract	1.0
Cysteinium chloride	0.5
Resazurin	0.002
Agar-agar**	20.0

**Agar-agar is equivalent to other different terms of agar.

Preparation

Suspend 41.5 g in 1 liter of demineralized water and autoclave (15 minutes at 121 °C).

Cool to about 48 °C and aseptically add, just before use, 5 mL/liter medium freshly prepared ferric (III) ammonium citrate solution (1 g in 5 mL demineralized water, heat sterilized: 15 minutes at 121 °C) and 1.0 mL/liter sodium sulfite solution (**1.06657**; 2.5 g in 10 mL demineralized water, filter sterilized).

The complete medium is yellowish to reddish-brown.
pH: 7.6 ± 0.2 at 25 °C.

Experimental Procedure and Evaluation

1 mL sample per plate, pour-plate method. After solidification, the plates are overlaid with sterile DCA.

Incubation: At 30 °C for 3 days anaerobically (for example, with Anaerocult™, Anaerocult™ A mini).

Reading of results and interpretation: Discrete black colonies of 1-5 mm in diameter are presumptive sulfite-reducing clostridia.

Note: To facilitate spore germination, heat treatment of the spores/sample of 10 minutes at 30 °C before inoculation of the agar is recommended.

Storage

Store at 15 °C to 25 °C, dry and tightly closed. Do not use clumped or discolored medium. Protect from UV light (including sunlight). For *in vitro* use only.

The prepared medium is to be used immediately. Do not store.
The base medium can be stored for at least 2 weeks at 4 °C.

Quality Control

Control strains	Growth 48 hours at 30°C, with Anaerocult™ A	Blackening	Recovery
<i>Clostridium perfringens</i> ATCC 10543	Good to Very good	+	≥ 70 %
<i>Clostridium sporogenes</i> ATCC 19404 (WDCM 00008)	Good to Very good	+	≥ 70 %
<i>Clostridium bifermentans</i> ATCC 19299	Good to Very good	+	≥ 70 %
<i>Clostridium perfringens</i> ATCC 13124 (WDCM 00007)	Good to Very good	+	≥ 70 %
<i>Bacillus licheniformis</i> ATCC 14580 (WDCM 00068)	Poor to Fair	-	

Please refer to the actual batch-related Certificate of Analysis.

A recovery rate of 50 % is equivalent to a productivity value of 0.5.

Literature

WEENK, G., FITZMAURICE, E., MOSSEL, D.A.A.: Selective enumeration of spores of *Clostridium* species in dried foods. - J. Appl. Bact., 70; 135-143 (1991).

Ordering Information

Product	Ordering No.	Pack size
Differential Clostridial Agar (DCA) acc. to WEENK	1102590500	500 g
Ammonium iron (III) citrate	F5879-100G	100 g
Sodium sulfite	1066570500	500 g
Anaerocult™ A	1323810001	1 x 10
Anaerocult™ A mini	1323690001	1 x 25

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