DIFFERENTIAL REINFORCED CLOSTRIDIAL BROTH (DRCM)

CAT Nº: 1416

For the enumeration of all clostridia by the MPN method in food, water and other material

FORMULA IN g/l

Beef Extract	8.00	Yeast Extract	1.00
Meat Peptone	5.00	L-Cysteine Hydrochloride	0.50
Casein Peptone	5.00	Sodium Disulfite	0.50
Sodium Acetate	5.00	Ferric Ammonium Citrate	0.50
Starch	1.00	Resazurin Sodium Salt	0.002
Glucose	1.00		

Final pH 7.1 ± 0.2 at 25ºC

PREPARATION

Suspend 27.5 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in autoclave at 121°C for 15 minutes. The prepared medium should be stored at 2-8°C. The color is reddish-brown.

The dehydrated medium should be homogeneous, free-flowing and beige in color. If there are any physical changes, discard the medium.

USES

DIFFERENTIAL REINFORCED CLOSTRIDIAL BROTH (DRCM) is used to determine the count of sulfite-reducing bacteria by the MPN technique.

Beef extract, Meat peptone and Casein peptone provide nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly of the B-group essential for bacterial growth. Glucose is the fermentable carbohydrate providing carbon and energy. L-Cysteine hydrochloride is the reducing agent. Starch absorbs any toxic metabolites produced. Resazurin is an oxidation indicator, turning from pink (aerobic) to colorless (anaerobic conditions), used as an indicator to monitor anaerobiosis. Ferric ammonium citrate and Sodium disulfite are H_2S indicators.

Clostridia reduce sulfite to sulfide, the iron sulfide produced causes the culture medium to turn black. As other bacteria can also produce sulfide, vegetative forms must first be removed from the culture by a relevant treatment (e.g. pasteurization), and the anaerobic spore-forming microorganisms must then be identified. To inhibit the growth of most non-spore-forming microorganisms add 70 IU/ ml polymyxin to the broth.

Incubate at 30ºC and observe after 4-7 days.

MICROBIOLOGICAL TEST

The following results were obtained in the performance of the medium from type cultures after incubation at a temperature of 30ºC and observed after 4-7 days.

Microorganisms	Growth	Black color
Escherichia coli ATCC 25922	Good	-
Bacillus cereus ATCC 11778	Moderate	-
Clostridium -perfringens ATCC 10543	Good	+

Clostridium perfringens ATCC13124	Good	+
Clostridium sporogenes ATCC 19404	Good	+

BIBLIOGRAPHY

GIBBS, B.M.: The detection of Clostridium welchii in the Differential Clostridial Medium technique. - J. Appl. Bact., 36; 23-33 (1973).
HIRSCH, A., a. GRINSTED, E.: Methods for the growth and enumeration of anaerobic spore-formers from cheese, with observations on the effect on nisin. - J. Dairy Res., 21; 101-110 (1954).

STORAGE

Once opened keep powdered medium closed to avoid hydration.