

Modified Charcoal Cefoperazone Deoxycholate Agar Base, mCCDA (i23665)

Used for the isolation of *Campylobacter* species.

Industry: Food / Water / Environmental Samples / Animal Feed

Principles & Uses

The modified Charcoal Cefoperazone Deoxycholate Agar Base, also known as mCCDA, recommended for selective isolation of *Campylobacter* species, incorporates essential components like beef extract and peptone to provide amino acids, nitrogen, and carbon for microbial growth. Sodium chloride maintains osmotic balance, while ferrous sulfate, charcoal, and sodium pyruvate act as oxygen quenchers. Cefoperazone, a cephalosporin antibiotic, enhances selectivity by inhibiting the growth of *Pseudomonas* and *Enterobacteriaceae*. Amphotericin B suppresses yeast and mold contaminants. Initially developed as Campylobacter Charcoal Differential Agar (CCDA), this medium aids in the isolation of *Campylobacter* species, crucial for human gastroenteritis. *Campylobacters*, found in the intestinal tracts of animals, contaminate animal-derived foods. The substitution of blood with charcoal eliminates variability.

Composition (gr/L)

Peptone from Casein 3 g, Peptone 10 g, Beef extract 10 g, Sodium Chloride 5 g, Charcoal 4 g, Sodium Deoxycholate 1 g, Ferrous Sulphate 0.25 g, Sodium Pyruvate 0.25 g, Agar 12 g.

Final pH at 25°C 7.4 ± 0.2

Preparation from dehydrated Powder

Suspend 22.75 g of the powder in 500 ml of purified water. Mix thoroughly. Autoclave at 121°C for 15 minutes. Cool the medium to 45-50°C. Rehydrate content of 1 vial of CCDA Supplement in 5 ml distilled water, filter-sterilize it and add to the cooled medium.

Quality Control

Dehydrated Appearance: Powder is homogeneous, free flowing, and gray-black.

Prepared Appearance: Prepared medium is gray-black.

Reaction of 4.55% Solution at 25°C: pH 7.4 ± 0.2

Cultural Response

Cultural response on modified CCDA at 37°C after 18 - 48 hours in an atmosphere consisting of approximately 5 - 6% oxygen, 3 - 10% carbon dioxide, and 84 - 85% nitrogen.

Organism (ATCC*)	Recovery
<i>Campylobacter jejuni</i> (33291)	Good Growth
<i>Campylobacter jejuni</i> (29428)	Good Growth
<i>Campylobacter coli</i> (33559)	Good Growth
<i>Escherichia coli</i> (25922)	Inhibited

*ATCC is a registered trade mark of the American Type Culture Collection.

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.