



HiCrome™ CarbaResist Agar Base

M2099

Intended Use:

Recommended for isolation and differentiation of Carbapenem *Enterobacteriaceae*.

Composition**

Ingredients	Gms / Litre
Acicase#	24.000
Chromogenic mixture	1.500
Agar	17.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Casein Acid Hydrolysate

Directions

Suspend 38.50 grams in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Aseptically add rehydrated content of 1 vial of Carba Selective Supplement (FD357). Mix well and pour into sterile Petri plates.

Principle And Interpretation

HiCrome™ CarbaResist Agar Base is a chromogenic medium designed for the detection and differentiation of Carbapenemase producing *Enterobacteriaceae* species. Carbapenems are the last line of defense against invasive or serious infections and are used to treat these life threatening infections that are caused by gram negative, drug resistant pathogens (1). Production of carbapenemase enzyme results in resistance to penicillins, cephalosporins (i.e. cefepime, ceftriaxone), carbapenems (i.e. meropenem, ertapenem) and aztreonam there by making these pathogens multi drug resistant. Most carbapenemase producing bacteria are included in the family Enterobacteriaceae, and are thus termed as carbapenem resistant Enterobacteriaceae (CRE). Besides the *Enterobacteriaceae* family, rare strains of *Pseudomonas aeruginosa* and *Acinetobacter baumannii* have also been found to produce carbapenemase (1,2,3).

Acicase provides nitrogenous and carbonaceous compounds, long chain amino acids, sulphur and other essential nutrients. Chromogenic mixture incorporated helps in colour differentiation. The chromogenic substrates are specifically cleaved by enzyme β -D-galactosidase produced by colistin resistant *E.coli* resulting in pink to purple coloured colonies. Whereas colistin resistant *K.pneumoniae* cleaves the other chromogenic substrate producing metallic blue coloured colonies. *Pseudomonas* species produce colourless colonies may be with light pigment. Presence of amino acids like phenylalanine and tryptophan from peptones helps for detection of tryptophan deaminase activity, indicating the presence of *Proteus* species, *Morganella* species and *Providencia* species by appearing brown.

The medium is intended to be used as a screening medium. Isolates should be tested further for Carbapenem susceptibility following CLSI guidelines.

Type of specimen

Clinical Samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (2, 3).

After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Due to the common structural features of colistin, AMPs, and ceragenins, the issue of cross-resistance may arise.
2. Among colistin-resistant isolates and strains generated by serial exposure to colistin, MICs increase up to several hundredfold compared to susceptible strains.
3. Final identification must be carried out by biochemical tests.
4. Resistance of organisms to colistin must be confirmed by microbroth dilution.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.7% agar gel.

Colour and Clarity of prepared medium

Light amber coloured clear to slight opalescent gel forms in Petri plates.

Reaction

Reaction of 3.85% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

Cultural characteristics observed after incubation at 35-37°C for 18 -24 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
Colistin Resistant <i>E.coli</i>	50 -100	luxuriant	≥50 %	pink to purple
Colistin Resistant <i>Klebsiella pneumoniae</i>	50 -100	luxuriant	≥50 %	metallic blue
Colistin Resistant <i>Pseudomonas aeruginosa</i>	50 -100	luxuriant	≥50 %	colourless, greenish pigment may be observed
Colistin Sensitive Gram negative bacteria	≥10 ³	inhibited	0 %	-
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	≥10 ³	inhibited	0 %	-

Key: (*) Corresponding WDCM numbers

Storage and Shelf Life

Store the dehydrated and the prepared medium at 2-8°C in a tightly closed container. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

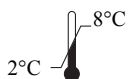
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In vitro diagnostic medical device



CE Marking



Storage temperature



Do not use if package is damaged



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