



HiCrome™ Colistin Resistant Agar Base

M2094

Intended Use:

Recommended for isolation and differentiation of gram negative colistin resistant microorganisms.

Composition**

Ingredients	Gms / Litre
Acicase#	20.000
Chromogenic mixture	1.500
Agar	17.000
Final pH (at 25°C)	7.3±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 HiCrome™ Colistin Resistant Selective Supplement (FD355). Mix well and pour into sterile Petri plates.

Principle And Interpretation

HiCrome™ Colistin Resistant Agar Base is a chromogenic medium designed for the detection and differentiation of Colistin resistant species of *Enterobacteriaceae*, *E.coli*, *K pneumoniae* and *Salmonella* species. Colistin is considered as last choice of antibiotic because, it has side effects, including nephrotoxicity and ototoxicity, and it is broadly active against Gram-negative bacteria (1,5). But with the increasing prevalence of infections caused by MDR gram-negative bacteria, colistin has reemerged as therapy agent. Plasmid-mediated colistin (COL) resistance due to the *mcr-1* pEtN gene was identified in China (6). Recent clinical data also shows the use of colistin is acceptably safe if certain precautions are taken (2).

Acicase provide 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 colorless 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 colistin susceptibility following CLSI guidelines.

Type of specimen

Clinical Samples - Blood , urine

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (3, 4). 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 micro broth 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.

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 ⁴	inhibited	0 %	-
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	≥10 ⁴	inhibited	0 %	-

Key: (*) Corresponding WDCM numbers

Storage and Shelf Life

Store between 15-25°C in a tightly closed container and the prepared medium at 2-8°C. 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. 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 (3,4).

Reference

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2. Falagas ME, Rafilidis PI.2009. Nephrotoxicity of colistin: new insight into an old antibiotic. Clin.Infect. Dis. 48:1729-1721.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
4. Jorgensen, J.H., Pfaller , M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
5. Lim LM, Ly N, Anderson D, Yang JC, Macander L, Jarkowski A, Forrest A, Bulitta JB, Tsuji BT.2010. Resurgence of colistin: a review of resistance, toxicity, pharmacodynamics, and dosing. Pharmacotherapy 30:1279–1291. doi:10.1592/phco.30.12.1279.
6. Liu YY, Wang Y, Walsh TR, Yi LX, Zhang Retal. Emergence of plasmid-mediated colistin resistance mechanism MCR-1 in animals and human beings in China: a microbiological and molecular biological study. Lancet Infect Dis 2016;16

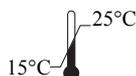
Revision : 02 / 2020



In vitro diagnostic medical device



CE Marking



Storage temperature



Do not use if package is damaged



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