

Carbapenem Resistant Enterobacteriaceae (CRE) Detection Chrom Agar Plate (M1130)

Recommended for isolation and differentiation of Carbapenem resistant Enterobacteriaceae from clinical samples.

Composition

Ingredients	g/ L
Casein Acid Hydrolysate -----	24.00
Chromogenic mixture -----	1.50
Agar -----	17.00

Description

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 pathogens. Production of carbapenemase enzyme results in resistance to penicillins, cephalosporins 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.

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 or may produce with light greenish pigment.

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

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines. After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use only. For professional use only. Follow good microbiological lab practices while handling specimens and culture.

Limitations

1. Final identification must be carried out by biochemical tests or antibiotic susceptibility as per CLSI.
2. Some intermediate strains of carbapenem may show poor growth.
3. The surface of the medium should be dry when inoculated.

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**Physical/Chemical control**

Color : Cream to yellow pH: 7.00-7.40

Cultural Response

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

Microbiological activity

Organisms	Inoculum CFU/ml	Growth
Carba Resistant Klebsiella pneumonia ATCC BAA 1705	50-100	Good growth, metallic blue colonies
Carba Resistant Klebsiella pneumonia	50-100	Good growth, metallic blue colonies
Carba Resistant Escherichia coli	50-100	Good growth, pink-purple colonies
Carba Sensitive Escherichia coli ATCC 25922	$\geq 10^4$	inhibited
Enterococcus faecalis ATCC 29212	$\geq 10^4$	inhibited

Storage and Shelf Life

Store between 2-8°C. 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 sample must be decontaminated and disposed of in accordance with current laboratory techniques.

Reference

1. Samra, Z., 2008, J. Clin. Microbiol; Vol. 146, P.3110-3111.
2. Hindiyeth, M., et. al. 2008, J. Clin. Microbiol.; Vol. 46, p.2879 -2883.
3. Pillai D.R. et.al. 2009. Emerg. Infect. Dis; Vol. 15, P.827-829.
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
5. 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.