HiCrome ESBL Agar Base

M1829

HiCrome ESBL Agar Base is recommended for selective isolation Extended-Spectrum β-lactamase-Producing *Enterobacteriaeceae*.

Composition**

Ingredients	Gms / Litre
Peptone mix	12.000
Chromogenic mixture	4.000
Sodium chloride	5.000
Buffer mix	4.000
Agar	15.000
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 40 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and add rehydrated contents of two vials of HiCrome ESBL Selective Supplement (FD278). Mix well and pour into sterile Petri plates.

Principle And Interpretation

Extended-spectrum ß-lactamase (ESBL)-producing organisms are an increasing challenge for healthcare practitioners fighting healthcare-associated infections (HAIs). *Escherichia coli, Klebsiella pneumoniae* , and *Klebsiella oxytoca* are the most common ESBL-producing pathogens (1). ESBL-producing organisms are generally resistant to many classes of antibiotics, including aminoglycosides and fluoroquinolones; ESBL-producing organisms are able to attack newer cephems and monobactams as well as narrow-spectrum cephalosporins and antigram-negative penicillins (1). They are associated with increased mortality and are difficult to detect and treat. The widespread use of extended-spectrum, third-generation cephalosporins, introduced in the 1980s to treat antibiotic-resistant bacteria, is believed to be a major contributor to the emergence of ESBL-producing organisms.

HiCrome ESBL Agar Base is chromogenic screening medium for the selective isolation of ESBL producing organisms. It contains peptone mix and yeast extract, which serves as the carbon and nitrogen sources. Chromogenic mixture is used to differentiate the ESBL producing organisms on the basis of colour. HiCrome ESBL Selective Supplement (FD278) helps in inhibition of other contaminating organisms. ESBL producing *E.coli* grow as either pink or purple colonies. ESBL producing members of the KESC group produce bluish green colonies; *Proteus* , *Morganella* and *Providencia* do not utilize any chromogen resulting in colourless to light brown colonies.

This medium can be inoculated with liquid suspension equivalent to 0.5 McFarland turbidity, prepared from rectal screening swabs, faecal samples or from isolated colony. Isolated colonies should not be directly plated on to this medium, because the high level inoculum may cause false positive results. Further confirmation using biochemical identification tests is recommended.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Yellow coloured opalescent gel forms in Petri plates

Reaction

Reaction of 4.0% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH
6.60-7.00

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 24 hours with added HiCrome ESBL Selective Supplement (FD278).

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
Cultural Response				
Escherichia coli NCTC 13351	50-100	luxuriant	>=50%	pink to purple
Klebsiella pneumoniae ATCC 700603	50-100	luxuriant	>=50%	bluish green
Enterobacter cloacae ATCC 23355	>=10^3	inhibited	0%	-
Citrobacter freundii ATCC 8581	>=10^3	inhibited	0%	
Candida albicans ATCC 10231	>=10^3	inhibited	0%	

Storage and Shelf Life
Store powder and prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference
1. Journal of Clinical Microbiology, February 2007, Page 501-505, Vol. 45, No. 2

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