ESBL Chromogenic Medium

Cat. 2062

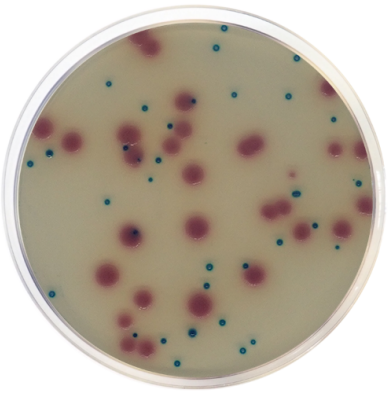
Chromogenic medium for overnight detection of gram-negative bacteria producing Extended Spectrum Beta-Lactamase.

Practical information

Aplications	Categories
Detection	ESBL Bacteria

Industry: Clinical

CE IVD



Principles and uses

ESBL (Extended Spectrum ß-Lactamases)is a Chromogenic medium for the detection of gram-negative bacteria producing Extended Spectrum Beta-Lactamase.

ESBL (Extended Spectrum ß-Lactamases) are enzymes capable of hydrolyzing penicillins, broad-spectrum cephalosporins and monobactams, ESBLs are often located on plasmids that are transferable from strain to strain and between bacterial species. ESBL-producing Enterobacteriae were first identified in Germany in 1983, and now they are widely recognized as clinically relevant causes of infections in community. During the 1990s were mostly found in Klebsiella species. However E. coli ESBL-producing has also been widely detected and both have a significant importance in hospital acquired infections. Community-acquired urinary tract infection (CA-UTI) is the most common infection caused by extended-spectrum ß-lactamase (ESBL)-producing Enterobacteriaceae and it is a big concern in management of patients and hospital costs. The development and spread of ESBL among Gram-negative bacteria and possible horizontal transfer calls for concern, especially in view of treatment failure, high treatment cost, and consequent discomfort to patients. The early detection of ESBL-producing bacteria carriers is essential to minimize their impact and spread.

Peptones and growth factors provide nitrogen, vitamins, minerals and aminoacids essential for growth. Chromogenic mixture allows the identification of ESBL producing microorganisms. The supplement inhibits the growth of all the non ESBL-producing bacteria.

Characteristics of the ESBL colonies:
- E. coli: pink colonies.
- Enterobacter aerogenes: dark blue colonies.
- Klebsiella pneumoniae: dark blue colonies.

Formula in g/L

Bacteriological agar	16	Chromogenic mixture	3
Peptone	14	Growth factors	15

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

Preparation

Suspend 48,0 grams of medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121 ºC for 15 minutes. Cool to 50 ºC and aseptically add two vials of ESBL supplement (Cat. 6042). Mix well and dispense into plates.

Instructions for use

For clinical diagnosis, the type of sample is urine, rectal sample and pulmonary aspiration.
- Inoculate on the surface making parallel striae with the handle or swab.

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- Incubate in aerobic conditions at 35±2 ºC for 18-24 hours.
- Reading and interpretation of results.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Beige	Amber, slightly opalescent	7,2±0,2

Microbiological test

Incubation conditions: (35±2 ºC / 18-24 h).

Microorganisms	Specification	Characteristic reaction
Klebsiella pneumoniae ATCC 13883	Total inhibition	
Enterococcus faecalis ATCC 19433	Partially inhibited	Light blue colonies
Escherichia coli ATCC 2469	Good growth	Pink colonies
Escherichia coli ATCC 25922	Total inhibition	
Staphylococcus aureus ATCC 25923	Total inhibition	
Proteus mirabilis ATCC 25933	Total inhibition	

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

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