OXFORD LAB FINE CHEM LLP
ISO 9001-2008 Certified Company

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Oxford
Range of
Laboratory Chemicals

TECHNICAL DATA SHEET

OXYcrome Chromogenic ESBL Agar Base

Principle

CESBL agar base is used for identification of Extended-spectrum β-lactamase producing microorganisms. The CESBL producing organisms are resistant to wide spectrum antibiotic and causes serious health related complication. The media is composed or peptone, chromogenic mixture, sodium chloride, phosphate buffering agent and agar. Special peptone provides nitrogenous and long chain amino acids. The chromogenic mixture contains chromogens and nutrients, the nutrients provide nitrogenous and carbonaceous compounds, vitamins and essential nutrients. While the chromogenic substance used in this media are X-Glucoside, Red-β-D-galactopyranoside and isopropyl thio-β-galactoside. X-Glucoside is a substrate for βGlucosidase that, upon enzymatic action, gives an insoluble indigo-blue chromophore. Red-β-Dgalactopyranoside is used for detection of beta-galactosidase. IPTG (isopropyl thio-β-galactoside) is an inducer of β-galactosidase activity in bacteria and is suitable for use with X-gal or Red-gal to detect lac gene activity in E. coli or genetically modified microorganisms. Sodium chloride maintains osmatic balance and phosphates provide buffering capacity to the medium. The selectivity is provided by antibiotics like cephalosporins, cephamycins, monobactams and carbapenems. The organisms resistant to wide spectrum antibiotic produce β-lactamase enzyme. The β-lactamases are enzymes; provide multi- resistance to β-lactam antibiotics such as penicillins, cephalosporins, cephamycins, monobactams and carbapenems (ertapenem), although carbapenems are relatively resistant to beta-lactamase. The *Escherichia coli*, produce ß-lactamase enzyme provided resistant to antibiotics and ß-galactosidase enzyme activity, cleave red-β-Dgalactopyranoside and forms pink color colonies. The *Klebsiella* cleave X-glucoside, by producing ßglucosidase enzyme, and result in formation of blue colonies.

Use: For the selective isolation of ESBL producing organisms.

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Contents*

Ingredients	Gram/Litre
Special Peptone	12.00
Chromogenic Mixture	4.00
Sodium Chloride	5.00
Phosphate buffering	4.00
Agar	15.00
pH at 25˚C	6.8 ±0.2

Directions: Dissolve 40.00 grams in 990 ml distilled water. Boil to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Add two vials of rehydrated content of ESBL selective supplement or 10 ml of antibiotic solution contain Ceftazidime (3.0 mg), Cefotaxime (3.0 mg), Ceftraizone (2.0 mg), Aztreonam (2.0 mg) and fluconazole (10.0 mg). Mix well and pour into sterile petri plates.

Specimens types analyzed
Clinical samples: Faeces or fecal and rectal screening swab samples.

Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

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Quality Control

Appearance	**Light beige colored, free-flowing, homogeneous**
Reaction of 4.00% solution	**6.8 ±0.2 at 25 ˚C**
pH	**6.60- 7.00**
Gelling	**Firm comparable with 1.5% agar gel**
Color and clarity of ready medium	**Light amber, clear opalescent gel**
Growth Promotion properties	**Best at ≤ 100 CFU at 32-37 ºC for 18-72 h**
Indicative properties	**Optimum at ≤ 100 CFU at 32-37 ºC for 18-48 h**
Negative control	**Performed using sterile distilled water**

Different Microbial Response: Cultural characteristics observed after incubation at 33-37°C for 18-24 hours. (Inoculum 50-100 CFU).

Organism	ATCC	Growth	Recovery	Colony color
Escherichia coli	13351	Luxurious	≥ 60%	Pinkish purple
Klebsiella pneumoniae	700603	Luxurious	≥ 60%	blue green
Enterococcus faecalis	29212	Inhibited	--	--
Candida albicans	10231	Inhibited	--	--

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label.
Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

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Reference

1. ***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 Ed. Vol. 1Wastewater, 23rd Ed., APHA, Washington, D.C.***
2. ***Lynne Shore Garcia and Henry D Isenberg. (2010) Clinical Microbiology Procedures Handbook3ndEd. Washington DC ASM Press.***

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