CM 20469 – CHROMOGENIC UNIVERSAL DIFFERENTIAL MEDIUM

INTENDED USE

Differential Medium is a differential medium recommended for presumptive identification of microorganisms from clinical and non-clinical specimens.

PRODUCT SUMMARYAND EXPLANATION

ChromogenicUniversal Differential Medium is a modification of the medium formulated on basis of the work carried out by Pezzlo, Wilkie et al, Friedman et al, Murray et al, Soriano and Ponte and Merlino et al. Chromogenic Universal Differential Medium is recommended for the presumptive identification of microorganisms from clinical and no clinical specimens where the medium has broader application as a general nutrient agar for isolation of various microorganisms. This medium helps in the identification of some gram-positive bacteria and gram-negative bacteria on the basis of different colony colors exhibited by them. These colors are formed due to the reactions of genus or species specific enzymes with the two chromogenic substrates incorporated in the medium. Enterococcus species, Escherichia coli and coliforms produce enzymes which specifically cleave these chromogenic substrates to give characteristically distinctive colony colors.

COMPOSITION

Ingredients	Gms / Ltr
Casein enzymic hydrolysate	4.000
Chromogenic mixtures	2.500
Peptic digest of animal tissues	15.000
Agar	13.500

PRINCIPLE

Peptonesin the medium serve as sources of amino acids like phenylalanine and tryptophan which aids in indicating tryptophan deaminase activity, thereby facilitating the identification of Proteus species, Morganella species and Providencia species. One of the chromogenic substrate is cleaved by ß-glucosidase enzyme possessed by Enterococci resulting in the formation of bluish green colonies. Escherichia coli possesses the enzyme ß- galactosidase which specifically cleaves the other chromogenic substrate resulting in the formation of purple coloured colonies. Escherichia coli can be differentiated and confirmed from other similar coloured colonies, by performing the indole test. Coliforms cleave both the chromogenic substrates forming blue to purple coloured colonies. Colonies of Proteus, Morganella and Providencia species appear brown due to tryptophan deaminase activity. Peptone and tryptone provide nitrogenous, carbonaceous compounds, essential growth nutrients and also serve as a source of amino acids.

INSTRUCTIONFOR USE

Dissolve 35.00 grams in 1000 ml purified / distilled water.

Gently heat to boiling to dissolve the medium completely.

Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.

Cool to 45-50°C.

Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder
Appearance of prepared medium : Light amber coloured, clear to slightly opalescent gel forms in petri dishes
pH (at 25°C) : 7.2 ± 0.2

INTERPRETATION
Culturalcharacteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Colour of colony	Recovery	Incubation Temperature	Incubation Period
Enterococcus faecalis	29212	50-100	Luxuriant	Blue, small colonies	>=70%	35-37°C	18-24 Hours
Escherichia coli	25922	50-100	Luxuriant	Purple	>=70%	35-37°C	18-24 Hours
Klebsiella pneumoniae	13883	50-100	Luxuriant	Blue -green, mucoid colonies	>=70%	35-37°C	18-24 Hours
Pseudomonas aeruginosa	27853	50-100	Luxuriant	Colourless (greenish pigment may be observed)	>=70%	35-37°C	18-24 Hours
Proteus mirabilis	12453	50-100	Luxuriant	Light brown	>=70%	35-37°C	18-24 Hours
Staphylococcus aureus subsp. aureus	25923	50-100	Luxuriant	Golden yellow	>=70%	35-37°C	18-24 Hours
Salmonella Typhi	6539	50-100	Luxuriant	Colourless	>=70%	35-37°C	18-24 Hours
Salmonella Typhimurium	14028	50-100	Luxuriant	Colourless	>=70%	35-37°C	18-24 Hours

PACKAGING:
Inpacksizeof100 gm and 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 2-8°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

Afteruse,prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1.Pezzlo M (1998), Clinical Microbiology Reviews 1:268-280
2.Wilkie M.E.,Almond M.K.,Marsh F.P.(1992),British Medical Journal 305:1137-1141.
3.Friedman M.P. et al (1991), Journal of Clinical Microbiology, 29:2385-2389.
4.Murray P., Traynor P. Hopson D., (1992), Journal of Clinical Microbiology 30:1600-1601.
5.Soriano F., Ponte C., (1992), Journal of Clinical Microbiology 30:3033-3034.
6.Merlino et al (1995) Abstr. Austr. Microbiol. 16(4):17-3

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*For LabUse Only