

89986 Universal Differential *ChromoSelect* Medium

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

Composition:

Ingredients	Grams/Litre
Casein enzymic hydrolysate	4.0
Peptic digest of animal tissue	15.0
Chromogenic mixture	2.5
Agar	13.5
Final pH 7.2 ± 0.2 at 25°C	

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

Appearance: Cream to yellow, homogeneous, free flowing powder.
 Gelling: Firm
 Color and Clarity: Light amber colored, opalescent gel forms in Petri plates.

Directions:

Suspend 35.00 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 pour into sterile Petri plates.

Principle and Interpretation:

Universal Differential *ChromoSelect* Medium is a modification of the medium formulated on basis of the work carried out by Pezzlo (1), Wilkie et al (2), Friedman et al (3), Murray et al (4), Soriano and Ponte (5) and Merlino et al (6). Universal Differential *ChromoSelect* Medium is recommended for the presumptive identification of microorganisms from clinical and non-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 colours exhibited by them. These colours 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 colours. Peptones in 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 substrates is cleaved by β-glucosidase enzyme possessed by *Enterococci* resulting in the formation of bluish green colonies. *Escherichia coli* possesses the enzyme β-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. Peptic digest of animal tissue and casein enzymic hydrolysate provide nitrogenous, carbonaceous compounds, essential growth nutrients and also serve as a source of amino acids.



Cultural characteristics after 18-24 hours at 35-37°C.

Organisms (ATCC)	Inoculum [CFU]	Growth	Recovery [%]	Colony appearance
<i>Escherichia coli</i> (NCTC 13351)	50-100	+++	≥70	Purple
<i>Enterococcus faecalis</i> (2921)	50-100	+++	≥70	Blue, small
<i>Klebsiella pneumoniae</i> (13883)	50-100	+++	≥70	Blue-green, mucoid
<i>Pseudomonas aeruginosa</i> (27853)	50-100	+++	≥70	Colorless (greenish pigment may be observed)
<i>Proteus mirabilis</i> (12453)	50-100	+++	≥70	Light brown
<i>Staphylococcus aureus</i> (25923)	50-100	+++	≥70	Golden yellow
<i>Salmonella Typhi</i> (6539)	50-100	+++	≥70	Colorless
<i>Salmonella Typhimurium</i> (14028)	50-100	+++	≥70	Colorless

References:

1. Journal of Clinical Microbiology, Page 501-505, Vol. 45, No. 2 (February 2007)
2. Pezzlo M (1998), Clinical Microbiology Reviews 1:268-280
3. Wilkie M.E., Almond M.K., Marsh F.P. (1992), British Medical Journal 305:1137-1141.
4. Friedman M.P. et al (1991), Journal of Clinical Microbiology, 29:2385-2389.
5. Murray P., Traynor P., Hopson D., (1992), Journal of Clinical Microbiology 30:1600-1601.
6. Soriano F., Ponte C., (1992), Journal of Clinical Microbiology 30:3033-3034.
7. Merlino et al (1995) Abstr. Austr. Microbiol. 16(4):17-3.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

