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Cat No. DD057 - MACCONKEY/CHROMAGAR ORIENTATION

Product Type: DIVIDED PETRI DISHES 90mm

Application- Selective differentiation of Enterobacteriaceae and Gram-positive urinary tract pathogens by biochemical and enzymatic reactions

Intended Use

CHROMagar™ Orientation is a non-selective chromogenic culture medium intended for use IS the qualitative direct detection, differentiation and presumptive identification of urinary tract pathogens. The test is

performed with urine specimens. Results can be interpreted after 18-24 h of aerobic incubation at 35-37 °C.

Concomitant cultures are necessary to recover organisms for further microbiological testing or epidemiological typing. A lack of growth or the absence of colonies on CHROMagar[™] Orientation does not preclude the presence of bacteria. CHROMagar[™] Orientation is not intended to diagnose infection nor to guide nor monitor treatment for infections. CHROMagar[™] Orientation can also be used with veterinary samples

MacConkey agar MacConkey Agar is recommended for use with clinical specimens likely to contain mixed microbial flora, such as urine, respiratory and wound, because it allows a preliminary grouping of enteric and other gram-negative bacteria. It was specially designed to improve the inhibition of swarming Proteus species, to achieve more definitive differentiation of lactose fermenters and non-fermenters, and for the promotion of superior growth of enteric pathogens.

MacConkey agars are slightly selective and differential plating media mainly used for the detection and isolation of gram-negative organisms. MacConkey Agar is used for isolating and differentiating lactose-fermenting from lactose-nonfermenting gram-negative enteric bacilli. MacConkey Agar contains crystal violet and bile salts that inhibit gram-positive organisms and allow gram-negative organisms to grow. Isolated colonies of coliform bacteria are brick red in color and may be surrounded by a zone of precipitated bile. This bile precipitate is due to a local pH drop around the colony due to lactose fermentation. Colonies that do not ferment lactose (such as typhoid, paratyphoid and dysentery bacilli) remain colorless. When lactose non fermenters grow in proximity to coliform colonies, the surrounding medium appears as cleared areas.

DD057 - CHROMagar Orientation and MacConkey agar uses the innovative CHROMagar Orientation media with specific chromogenic substrates incorporated in the medium, permitting the simultaneous isolation and differentiation by color of UTI pathogens. The results give a clear visual enumeration and clear visual differentiation by color of gram positive and gram-negative UTI pathogens on a single medium, CHROMagar Orientation. The MacConkey medium includes bile salts that inhibit growth of gram-positive microorganisms; and lactose which aid in the differentiation of gram-negative bacteria. DD057 - CHROMagar Orientation and MacConkey agar enables side-by-side bacteria comparison on the same plate. DD057 - Sensitive enough to detect microbial counts of 10³ cfu/ml

Composition g/L CHROMagarTM Orientation

Strite magainer Strendenson			
Agar	15.0 g/L		
Peptone and yeast extract	17.0 g/L		
Chromogenic mix	1.0 g/Ľ		
MacConkey Agar	-		
Approximate Formula* Per Liter			
Pancreatic Digest of Gelatin	17.0 g		
Peptones (meat and casein)	3.0 g		
Lactose	10.0 g		
Bile Salts	1.5 g		
Sodium Chloride	5.0 g		
Agar	13.5 g		
Neutral Red	0.03 g		
Crystal Violet	1.0 mg		
*Adjusted and/or supplemented as required to me	eet performance criteria		



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Appearance: CHROMagarTM Orientation: Light Amber MacConkey Agar: reddish-purple, slightly opalescent

pH Range: CHROMagar[™] Orientation: 7.0 ± 0.2 MacConkey Agar: 7.1 ± 0.2

Procedures- Observe aseptic techniques. The agar surface should be smooth and moist, but without excessive moisture. Streak the specimen as soon as possible after it is received in the laboratory. The streak plate is used primarily to isolate pure cultures from specimens containing mixed flora. A nonselective medium should also be streaked to increase the chance of recovery when the population of gram-negative organisms is low and to provide an indication of other organisms present in the specimen. Alternatively, if material is being cultured directly from a swab, roll the swab over a small area of the surface at the edge; then streak from this inoculated area. Incubate plates, protected from light, at 35 ± 2 °C (do not use CO₂-enriched atmosphere with MacConkey II Agar) or other appropriate temperature for 18-24 h

Warning and Precautions - For professional use only. Follow good microbiological lab practices while handling specimens and culture. Do not use Petri dishes if they show evidence of microbial contamination, discoloration, drying, cracking, or other signs of deterioration. Avoid freezing and overheating. The Petri Dishes may be used / inoculated up to the expiration date and incubated for the recommended incubation times. After use and prior to discarding, specimen containers and all contaminated material, including the used culture media and contaminated culture containers, must be sterilized or incinerated by validated procedures. Since the nutritional requirements of organisms vary, some strains may be encountered that fail to grow or grow poorly on this medium.

If excessive moisture is observed, invert the bottom over an off-set lid and allow to air dry in order to prevent formation of a seal between the top and bottom of the plate during incubation. After use, prepared plates, specimen containers and other contaminated materials must be sterilized by autoclaving before discarding. Storage Instructions: On receipt, store plates in the dark at 2–8 °C. Avoid freezing and overheating. Do not open until ready to use.

Microorganism	CHROMagar Orientation MacConkey Agar				
E. coli	Pink-red, flat, medium sized	Dark pink colonies			
Klebsiella	Metallic blue, mucoid, rather big	Dark pink mucoid			
Proteus	Beige to brown on beige background	Colorless, translucent			
	creamy, green, translucent rather big,				
Pseudomonas	non-swarming	Pink translucent			
Enterococcus	Turquoise, small	Dark pink colonies			
Strep. agalactiae	Small, translucent, light blue shadowed	No growth			
Staph aureus	white, compound, medium-sized	No growth			
Staph epidermidis	small, white	No growth			
Staph	pink-light purple convex compound,				
saprophyticus	opaque	No growth			
Candida	Creamy, wet	No growth			
Diphteroides	White creamy, small opaque No growth				

COLONY MORPHOLOGY

LIMITATIONS AND COMPLEMENTARY TESTS

CHROMagar[™] Orientation:

- Most of Serratia plymutica will grow mauve.
- Some S. saprophyticus strains can grow in cream-colored colonies.
- Final identification may require additional testing such as biochemical or immunological test: MacConkey agar

Not all strains of E. coli ferment lactose. For identification, organisms must be in pure culture. Morphological, biochemical, and/or serological tests should be performed for final identification. A single medium is rarely adequate for detecting all organisms of potential significance in a specimen. Cultures of specimens grown on selective media should, therefore, be compared with specimens cultured on nonselective media to obtain additional information and help ensure recovery of potential pathogens

Performance Testing Results

GPT: inoculum 10-100 cfu.



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Inhibitory properties: inoculum 10000 cfu

		Incubation	Incubation				
TEST	ATCC	Temp. (°C)	Cond	Reaction 1		Reaction 2	
Medium				MacConkey Agar		CHR. ORIENTATION	
			Aerobic, 24		Pink-red, slight		
Escherichia coli	25922	33-37 °C	hours	Pass	precipitate	Pass	Pink-red
Klebsiella			Aerobic, 24				
pneumoniae	13883	33-37 °C	hours	Pass	Pink-red, mucoid	Pass	Metallic blue, mucoid
			Aerobic, 24		Colorless,		
Proteus mirabilis	4630	33-37 °C	hours	Pass	nonswarming	Pass	Clear, beige on beige
Pseudomonas			Aerobic, 24				Transparent, yellow
aeruginosa	27853	33-37 °C	hours	Pass	Colorless	Pass	green
Enterococcus			Aerobic, 24				
faecalis	19433	33-37 °C	hours	Inhibited		Pass	Small, dry, turquoise
Staphylococcus			Aerobic, 24				
aureus	25923	33-37 °C	hours	Inhibited		Pass	Small, white opaque
Staphylococcus			Aerobic, 24				
epidermidis	12228	33-37 °C	hours	Inhibited		Pass	Small white

incubation condition: aerobic time: 24 hours temp.:35+/-2 deg.c