

MACCONKEY AGAR

APPLICATION	MacConkey Agar is recommended for selective isolation of <i>Escherichia coli</i> from pharmaceutical products and is in accordance harmonized methodology of EP.																								
PRINCIPLE AND INTERPRETATION	<p>Mac Conkey Agar is the earliest selective and differential medium for cultivation of coliform organisms¹². Subsequently Mac Conkey Agar and Broth have been recommended for use in microbiological examination of foodstuffs³ and for direct plating / inoculation of water samples for coliform counts⁴. This medium is also accepted by the Standard Methods for the Examination of Milk and Dairy Products⁵. European pharmacopoeia⁶ has recommended this medium for the subculture and identification of <i>Escherichia coli</i>. It is in accordance with the harmonized method of USP/EP⁷⁸ Pancreatic digest of gelatin and peptones (meat and casein) provide the essential nutrients, vitamins and nitrogenous factors required for growth of microorganisms. Lactose monohydrate is the fermentable source of carbohydrate. The selective action of this medium is attributed to crystal violet and bile salts, which are inhibitory to most species of gram-positive bacteria. Sodium chloride maintains the osmotic balance in the medium. After enrichment of <i>Escherichia coli</i> in MacConkey Broth, it is then subcultured on MacConkey Agar. Gram negative bacteria usually grow well on the medium and are differentiated by their ability to ferment lactose. Lactose fermenting strains grow as red or pink and may be surrounded by a zone of acid precipitated bile. The red colour is due to production of acid from lactose, absorption of neutral red and a subsequent colour change of the dye when the pH of medium falls below 6.8. Lactose non-fermenting strains, such as <i>Shigella</i> and <i>Salmonella</i> are colourless and transparent and typically do not alter appearance of the medium. <i>Yersinia enterocolitica</i> may appear as small, non-lactose fermenting colonies after incubation at room temperature.</p>																								
MEDIUM COMPOSITION*	<table border="0"> <tr> <td>Peptones (meat and casein)</td> <td>.....</td> <td>3.00 g/l</td> </tr> <tr> <td>Pancreatic digest of gelatin</td> <td>.....</td> <td>17.00g/l</td> </tr> <tr> <td>Lactose Monohydrate</td> <td>.....</td> <td>10.00 g/l</td> </tr> <tr> <td>Bile salts</td> <td>.....</td> <td>1.50 g/l</td> </tr> <tr> <td>Sodium chloride</td> <td>.....</td> <td>5.00 g/l</td> </tr> <tr> <td>Crystal Violet</td> <td>.....</td> <td>0.0001 g/l</td> </tr> <tr> <td>Neutral red</td> <td>.....</td> <td>0.030 g/l</td> </tr> <tr> <td>Agar</td> <td>.....</td> <td>13.50 g/l</td> </tr> </table> <p>Final pH 7.1 ± 0.2</p> <p>*Adjusted and/or supplemented as required to meet performance criteria</p>	Peptones (meat and casein)	3.00 g/l	Pancreatic digest of gelatin	17.00g/l	Lactose Monohydrate	10.00 g/l	Bile salts	1.50 g/l	Sodium chloride	5.00 g/l	Crystal Violet	0.0001 g/l	Neutral red	0.030 g/l	Agar	13.50 g/l
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STORAGE	<p>+2°/+25°C</p> <p>Protect from light, excessive heat, moisture and freezing</p>																								

¹ MacConkey, 1900, The Lancet, ii:20

² MacConkey, 1905, J.Hyg., 5:333

³ Downes F.P. and Itok (eds.) 2001, Compendium of methods for The Microbiological Examination of Foods, 4th Ed., APHA, Washington D.C.

⁴ Eaton A.D., Clesceri, L.S. and Greenberg A.W. (Eds), 2005, Standard methods for the Examination of Water and Wastewater, 21st Ed., APHA, Washington D.C.

⁵ Wehr H M and Frank J H, 2004, Standard Methods for the Examination of dairy products, 17th Ed., APHA, Washington D.C.

⁶ European Pharmacopoeia, current Edition

⁷ The US Pharmacopoeia, current edition, The US Pharmacopoeia Convention. Rockville MD

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QUALITY CONTROL	Growth Promotion Test: 10-100 viable microorganisms⁹	
	Control strain	Incubation Conditions
	<i>E. coli</i> ATCC 8739	18 h at 32.5 ± 2.5°C
	<i>E. aerogenes</i> ATCC 13048	18 h at 32.5 ± 2.5°C
	<i>S. aureus</i> ATCC 6538	72 h at 32.5 ± 2.5°C
Sterility control		No growth
Appearance		Red with purplish tinge, clear to slightly opalescent gel forms in plates
BARCODE	Data matrix code is composed of 20 digits:	
	Digits 1→2	Media code
Digits 3→7	Batch number	
Digits 8→9	Sub-batch number	
Digits 10→14	Progressive number	
Digits 15→20	Espiri Date (DDMMYY)	
GENERAL WARNING NOTES	Device must be handled according to asepsis precautions, of utilization of culture media is strictly referred to the type of analysis that must be done. Please refer to specific norms and procedures. Do not use if device is broken. Do not use if media shows accidental contamination signs. Do not utilize after expiry date. Let device reach room temperature before utilizing. Results interpretation must be done by qualified personnel, who must consider context of use.	
	Disposal of waste must be carried out according to national and local regulations in force.	

⁹ For *E. coli* ≥100 viable microorganisms

MACCONKEY AGAR

This item is available in:

- No Gamma irradiated media plates

MODEL	PRODUCT CODE	ORDER CODE	DESCRIPTION	SHELF LIFE
Ø90mm	081B/10	081B/10.100 (100pcs/pack)	Filling volume: 60ml Packaging: Single Wrapping (SW)	6 months

*Customized filling volumes and formulations are available upon request
To receive information please
contact info@cpcbiotech.it*