



**MacCONKEY AGAR (W/ CV, NaCl, 0.15% BILE SALTS & 1% LACTOSE)
TM 337**

INTENDED USE

For isolation of coliform and lactose fermenting enteric bacteria

COMPOSITION

Ingredients	Gms/Ltr.
Gelatin peptone	17.000
Agar	15.000
Lactose	10.000
Sodium chloride	5.000
Tryptone	1.500
Peptone	1.500
Bile salts	1.500
Neutral red	0.030
Crystal violet	0.001

PRODUCT SUMMARY AND EXPLANATION

MacConkey Agar is based on the bile salt-neutral red-lactose agar of MacConkey. The original MacConkey medium was used to differentiate strains of Salmonella typhosa from members of the coliform group. Formula modifications improved the growth of Shigella and Salmonella strains. These modifications included the addition of 0.5% sodium chloride, decreased agar content, and altered bile salts and neutral red concentrations. The formula improvements gave improved differential reactions between these enteric pathogens and the coliform group. MacConkey agar is mainly used for the detection and isolation of gram negative organisms from clinical, dairy, food, water, pharmaceutical and industrial sources. It is also recommended for the selection and recovery of the Enterobacteriaceae and related enteric gram-negative bacilli. USP recommends this medium for use in the performance of Microbial Limit Tests.

PRINCIPLE

Peptone, Tryptone and gelatin peptone are sources of nitrogen, carbon, long chain amino acids and other nutrients. Lactose is a fermentable carbohydrate. Sodium chloride maintains the osmotic equilibrium. Neutral red is the pH indicator dye. 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 pink to red in color and may have a zone of precipitated bile. This

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PRODUCT DATA SHEET

bile precipitate is due to a local pH drop around the colony due to lactose fermentation. Colonies that do not ferment lactose remain colorless. When lactose non-fermenters grow in proximity to coliform colonies, the surrounding medium appears as cleared areas.

INSTRUCTION FOR USE

1. Dissolve 51.53 grams in 1000 ml distilled water.
2. Gently heat to boiling with gentle swirling to dissolve the agar completely.
3. Sterilize by autoclaving at 15 psi (121°C) for 15 minutes.
4. Avoid overheating.
5. Cool to 45 - 50°C and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder: Light yellow to pink colour, homogeneous free flowing powder

Appearance of prepared medium: Red with purplish tinge colour, clear to slightly opalescent gel

pH (at 25°C) : 7.1 ± 0.2

INTERPRETATION:

Culture characteristics observed after incubation period of 18 - 24 hours at $35 \pm 2^\circ\text{C}$.

Microorganisms	ATCC	*Inoculum (CFU)	Appearance of colony	Standard recovery (%)
<i>Escherichia coli</i>	25922	50-100	Pink with bile ppt.	$\geq 50\%$
<i>Proteus vulgaris</i>	13315	50-100	Colourless	$\geq 50\%$
<i>Salmonella typhimurium</i>	14028	50-100	Colourless	$\geq 50\%$
<i>Salmonella typhi</i>	6539	50-100	Colourless	$\geq 50\%$
<i>Enterococcus faecalis</i>	29212	50-100	Pale pink	$\leq 40\%$
<i>Staphylococcus aureus</i>	25923	≥ 1000	----	0%
<i>Staphylococcus epidermidis</i>	12228	≥ 1000	----	0%

STORAGE & STABILITY

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°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.

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REFERENCES

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7. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
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NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.