MAC CONKEY/ VOGEL JOHNSON/ SABOURAUD

Selective media for Gram-negatives, *Staphylococcus aureus* and fungi isolation.

MAC CONKEY TYPICAL FORMULA (g/L)		VOGEL JOHNSON TYPICAL FORMULA (g/L)		SABOURAUD CAF TYPICAL FORMULA (g/ L)	
Tryptone	17.0	Tryptone	2.0	Peptomycol	10.0
Peptone	3.0	Meat Extract	7.0	Glucose	40.0
Lactose	10.0	Yeast Extract	8.0	Agar	15.0
Bile Salts n°3	1.5	Mannitol	10.0	Final pH 5.6 ± 0.2	
Sodium Chloride	5.0	Potassium Phosphate Bibasic	3.5		
Neutral Red	0.03	Lithium Chloride	5.0		
Crystal Violet	0.001	Glycine	10.0		
Agar	15.0	Phenol Red	0.025		
Final pH 7.1 ± 0.2		Potassium Tellurite 1%	20.0 mL		
		Agar	15.0		
		Final pH 7.2 ± 0.2			

DESCRIPTION

MAC CONKEY AGAR is a selective medium for Gram- negative bacteria isolation and differentiation from water, dairy products and clinical specimens according to European Pharmacopoeia. The medium allows a good growth of *Salmonella* and *Shigella spp*.
VOGEL JOHNSON AGAR is a selective medium for the detection of *Staphylococcus aureus* from foods and clinical specimens. It is recommended by United States Pharmacopoeia XXI for the detection of *Staphylococcus aureus* in pharmaceutical products (Microbial Limit Tests).
SABOURAUD AGAR is a medium for yeasts and moulds isolation.

PRINCIPLE

Tryptone, meat extract, peptone and Peptomycol yield the medium highly nutritive providing organic nitrogen, amino acids and peptides with long chain.
In **MAC CONKEY AGAR** lactose is a source of energy whose fermentation makes pH of the medium decrease with consequent precipitation of bile salts and absorption of neutral red. Bile Salts and Crystal Violet inhibit the growth of Gram-positive bacteria: the staining mainly inhibits the growth of enterococci and staphylococci.
In **VOGEL JOHNSON AGAR** yeast extract is a source of aminoacids and vitamins of group B while glycine favours the growth of staphylococci. Lithium chloride and potassium tellurite inhibit contaminating flora. Mannitol is the substrate for the fermentation and Phenol Red is the pH indicator. Potassium phosphate is the buffer of the medium.
In **SABOURAUD AGAR** the high glucose concentration and the acid pH make this medium selective for fungi: particularly the acid pH inhibits the bacterial growth, except the acidophilic ones.
Agar is the solidifying agent.

TECHNIQUE

Inoculate plates streaking the sample to test on the agar surface using a sterile loop. Incubate at 36+/-1°C for 24-48 and eventually prolong incubation for further 24-48 hours at 25-30°C.

INTERPRETATION OF RESULTS

On **MAC CONKEY AGAR** coliforms cultivate with red-pink colonies surrounded by a halo of precipitation; lactose non-fermenting bacteria cultivate with colorless colonies.
On **VOGEL JOHNSON AGAR** *Staphylococcus aureus* grows with black colonies surrounded by a yellow halo. *Staphylococcus epidermidis* grows with black colonies without changing the color of the indicator. After about 18 hours *Proteus spp*. grows with black colonies which turn the color of the medium to brown.
On **SABOURAUD AGAR** yeasts and moulds produce white colonies.

STORAGE

10-30°C away from light, until the expiry date on the label or until signs of deterioration or contamination are evident.

WARNING and PRECAUTIONS

The product is not classified as hazardous by current legislation and does not contain harmful substances in concentrations of ≥1%. The product is designed for *In vitro* diagnostic use and must be used only by properly trained operators.

DISPOSAL of WASTE

Disposal of waste must be carried out according to national and local regulations in force.

REFERENCES

1. Unites States Pharmacopoeia XXI (1985). Microbial Limit Tests. Rockville. Md.
2. Vogel, R.A., and Johnson, M.J. (1961). Pub. Hlth Lab.**18**: 131.
3. United States Pharmacopoeia 24,2000. Microbial Limit Tests, 1814:1818.
4. APHA (1963). Diagnostic procedures and reagents.
5. European Pharmacopoeia 4th ed. 2002.

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PRODUCT SPECIFICATIONS

NAME
MAC CONKEY/ VOGEL JOHNSON/ SABOURAUD

PRESENTATION
Ready plates (90 mm) with three sectors.

STORAGE
10-30 °C

PACKAGE

Code	Content	Packaging
13480	20 plates	1. 5 plates in thermically soldered film 2. 4 x 5 plates in cardboard box
13480*	100 plates	1. 5 plates in thermically soldered film 2. 2 x 5 plates in plastic bag 3. 10 piles (2x5 plates) in cardboard box

USE
DESCRIPTION
MAC CONKEY AGAR is a selective medium for Gram- negative bacteria isolation and differentiation from water, dairy products and clinical specimens according to European Pharmacopoeia. The medium allows a good growth of *Salmonella* and *Shigella spp*.
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SABOURAUD AGAR is a medium for yeasts and moulds isolation.

TECHNIQUE
Refer to technical sheet of the product.

APPEARANCE OF THE MEDIUM
MAC CONKEY AGAR is a pinkish-red medium, clear without precipitates.
VOGEL JOHNSON AGAR is a red-orange medium, slightly opalescent.
SABOURAUD CAF AGAR is an amber medium, slightly opalescent.

SHELFLIFE
6 months

QUALITY CONTROL
1. Control of general characteristics, label and print
2. Sterility control
   7 days at 25 ± 1°C, in aerobiosis
   7 days at 36 ± 1°C, in aerobiosis
3. Microbiological control

Inoculum for productivity: 10-100 UFC/ml
Inoculum for selectivity: 10^4-10^5 UFC/ml
Inoculum for specificity: ≤ 10^4 UFC/ml
Incubation conditions: 36+/-1°C for 18-24 hours

Microorganisms		Growth on VOGEL JOHNSON AGAR	Growth on MAC CONKEY AGAR	Growth on SABOURAUD AGAR
Staphylococcus aureus	ATCC 25923	Good/ Black colonies/ Yellow halo	Inhibited	-
Escherichia coli	ATCC 25922	Inhibited	Good/ Red- pink colonies	-
Staphylococcus epidermidis	ATCC 14990	Good/ Black colonies	Inhibited	-
Salmonella typhimurium	ATCC 14028	-	Good/ Colorless colonies	-
Enterobacter aerogenes	ATCC 13048	-	Good/ Red colonies	-
Candida albicans	ATCC 10231	-	-	Good/ White colonies
Saccharomyces cerevisiae	ATCC 9763	-	-	Good/ White colonies

TABLE OF SYMBOLS

IVD *In Vitro* Diagnostic Medical Device	Do not reuse	Manufacturer	Contains sufficient for <n> tests	Temperature limitation
REF Catalogue number	Fragile, handle with care	Use by	Caution, consult accompanying documents	LOT Batch code

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CE IVD

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