PROREADY
Ready To Use Culture Media

CE IVD

# UPUTSTVO ZA UPOTREBU (SRB)

## MacConkey Agar Plate w/ 0.15% Bile Salts, CV and NaCl

Podloga za selektivnu izolaciju i diferencijaciju koliforma i drugih enteropatogena.

### Sadržaj pakovanja:

| Šifra artikla (pakovanja) REF | Opis | Šifra primarnog pakovanja: | Broj podloga |
|---|---|---|---|
| **PRM081V20** | Podloga izlivena u petri posudama od ø90 | **PRM081** | **20** |
| **PRM081V60** | | | **60** |
| **PRM081V240** | | | **240** |
| **PRM081M40** | Podloga izlivena u petri posudama od ø50 | | **40** |

### Uputstva

Pod aseptičnim uslovima inokulisati ploču metodom površinskog zasejavanja. Nakon inkubacije posmatrati rast i boju kolonija.

### Princip i interpretacija

MacConkey agar w/ 0.15% Bile Salts, CV and NaCl je delimično selektivna i diferencijalna podloga koja se uglavnom koristi za detekciju i izolaciju Gram-negativnih bakterija iz različitih kliničkih uzoraka (1), uzoraka mlečnih proizvoda (2), hrane (3, 4), vode (5), farmaceutskih proizvoda (6, 14) i industrijskih uzoraka (7). Takođe se preporučuje za selekciju i oporavak Enterobacteriaceae i srodnih enteričnih Gram-negativnih bacila. USP preporučuje ovu podlogu za upotrebu u Microbial Limit Tests (6).
Ova podloga je selektivna obzirom da je koncentracija žučnih soli, koje inhibiraju Gram-pozitivne bakterije, niska u poređenju sa drugim podlogama za enterobakterije. Ovu podlogu preporučuje APHA za direktno zasejavanje uzoraka vode radi ispitivanja prisustva koliformnih bacila, za ispitivanje uzoraka hrane na prisustvo organizama koji dovode do trovanja hranom (3) i za izolaciju *Salmonella* i *Shigella* vrsta iz sira (2). Osim ovoga, podloga se takođe može koristiti za određivanje broja coli-aerogenes bakterija ili bakterija rodova *Escherichia* i *Aerobacter* u fecesu goveda i ovaca (8), određivanje broja coli-aerogenes bakterija i laktoza negativnih bakterija na trupovima živine (9), određivanje broja u konzerviranom pilećem mesu (10) i prepoznavanje coli-aerogenes bakterija tokom ispitivanja roda *Aeromonas* (11).
MacConkey Agar je jedna od prvih selektivnih i diferencijalnih podloga za kultivaciju enteričnih mikroorganizama iz brojnih kliničkih uzoraka (13, 12). Originalna podloga sadrži proteine, žučne soli, natrijum hlorid i dve boje.
Selektivno dejstvo ove podloge zasnovano je na prisustvu kristal violeta i žučnih soli koji deluju inhibitorno na većinu Gram-pozitivnih bakterija. Gram-negativne bakterije obično dobro rastu na podlozi i diferenciraju se po svojoj sposobnosti fermentacije laktoze. Laktoza-fermentujući sojevi daju crvene ili ružičaste kolonije koje mogu biti okružene zonom nastalom kiselinskom precipitatacijom žuči. Crvena boja javlja se usled produkcije kiseline nastale fermentacijom laktoze, apsoprcije neutralno crvenog i posledične promene boje kada pH podloge padne ispod 6,8. Sojevi koji ne fermentuju laktozu, kao što su *Shigella* spp. i *Salmonella* spp. daju bezbojne, providne kolonije koje obično ne utiču na izgled podloge.
Peptoni su izvora azota i drugih hranljivih materija. Laktoza je fermentabilni ugljeni hidrat, žučne soli i kristal violet su selektivni agensi koji inhibiraju rast Gram-pozitivnih bakterija. Neutralno crveno je pH indikator.

### Kontrola kvaliteta

Podaci i rezultati kontrole kvaliteta dati su u sertifikatu analize za svaku seriju.

### Skladištenje i rok upotrebe

Čuvati između 15-25°C. Nakon prvog otvaranja čuvati na 2-8°C. Upotrebiti pre isteka datuma označenog na nalepnici.

### Mere predostrožnosti

Ovaj proizvod ne sadrži hazardne supstance u koncentracijama koje su iznad propisanih limita određenih važećim zakonskim regulativama i zato nije klasifikovan kao opasan. Ipak, preporučeno je slediti smernice iz bezbednosnog lista za pravilnu upotrebu. Ovaj proizvod je namenjen isključivo za upotrebu u laboratorijskim uslovima, od strane profesionalno obučene osobe.
Proizvod ne upotrebljavati ukoliko je primarno pakovanje oštećeno ili proizvod ne odgovara navedenim karakteristikama.

### Odlaganje otpada

Odlaganje otpada mora biti u skladu sa nacionalnim i lokalnim regulativama koje su na snazi. Svaka laboratorija je odgovorna za rukovanje i odlaganje otpada koji nastaje u toku rada.

### Upotrebljeni simboli

| | | | |
|---|---|---|---|
| CE | Evropski znak usaglašenosti | | Držati uspravno |
| IVD | In vitro dijagnostičko medicinsko sredstvo | REF | Kataloški broj |
| | Ne izlagati direktno sunčevim zracima | LOT | Lot broj |
| | Konsultovati uputstvo za upotrebu | | Rok upotebe |
| | Ne koristiti više puta | | Temperatura čuvanja |
| Σ | Veličina pakovanja | | Proizvođač |
| EC REP | Ovlašćeni predstavnik u Evropskoj uniji | | |

| | |
|---|---|
| EC REP | Salus Cons kft. 6722 Szeged, Bécsi krt 23, HUNGARY<br>e-mail: office@saluscons.com |

### Literatura


1. Murray P. R, Baron E, J., Jorgensen J. H., Pfaller M. A., Yolken R. H., (Eds.), 8th Ed., 2003, Manual of Clinical Microbiology, ASM, Washington, D.C.
2. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
3. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
4. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, D.C.
5. 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.
6. The United States Pharmacopoeia, 2009, The United States Pharmacopeial Convention, Rockville, M.D.
7. Williams, (Ed.), 2005, Official Methods of Analysis of the Association of Official Analytical Chemists, 19th Ed., AOAC, Washington, D.C
8. Medrek T. F and Barnes Ella M., 1962, J. Appl. Bacteriol., 25(2),159-168
9. Barnes Ella M. and Shrimpton D. H., 1957, J. Appl. Bacteriol., 20(2),273-285.
10. Thornley Margaret J., 1957, J. Appl. Bacteriol., 20(2), 273-285.
11. Eddy B. P., 1960, J. Appl. Bacteriol., 23(2).216-249.
12. MacConkey A., 1905, J. Hyg., 5:333.
13. MacConkey A., 1900, The Lancet, ii:20.
14. British Pharmacopoeia, 2009, The Stationery office British Pharmacopoeia.


Broj rešenja o registraciji: 515-02-02534-22-003

PROREADY
Ready To Use Culture Media

CE IVD

# INSTRUCTION FOR USE (EN)

## MacConkey Agar Plate w/ 0.15% Bile Salts, CV and NaCl

Medium is recommended for the selective isolation and differentiation of coliform organisms and other enteric pathogens.

### Package contents:

| Item code (packaging) REF | Description | Primary packaging code: | Number of products |
|---|---|---|---|
| **PRM081V20** | Substrate poured into petri dishes of ø90 | **PRM081** | **20** |
| **PRM081V60** | | | **60** |
| **PRM081V240** | | | **240** |
| **PRM081M40** | Substrate poured into petri dishes of ø50 | | **40** |

### Directions

Surface spread the test inoculum aseptically on the plate. After incubation, observe growth and color of colonies.

### Principle and interpretation

MacConkey Agar Plate w/ 0.15% Bile Salts, CV and NaCl are slightly selective and differential plating media mainly used for the detection and isolation of Gram-negative organisms from clinical (1), dairy (2), food (3, 4), water (5), pharmaceutical (6, 14) and industrial sources (7). 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 (6).

These agar media are selective since the concentration of bile salts, which inhibit Gram-positive microorganisms, is low in comparison with other enteric plating media. The medium is recommended by APHA and can be used for the direct plating of water samples for coliform bacilli, for the examination of food samples for food poisoning organisms (3) and for the isolation of Salmonella and Shigella species in cheese (2). Other than that this medium is also used for count of coli-aerogenes bacteria in cattle and sheep faeces (8), the count of coli-aerogenes and non-lactose fermenters in poultry carcasses (9), bacterial counts on irradiated canned minced chicken (10) and the recognition of coli-aerogenes bacteria during investigations on the genus Aeromonas (11).

MacConkey Agar is the earliest selective and differential medium for cultivation of enteric microorganisms from a variety of clinical specimens (13, 12). The original medium contains protein, bile salts, sodium chloride and two dyes.

The selective action of this medium is attributed to crystal violet and bile salts, which are inhibitory to most species of Gram-positive bacteria. 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 colonies 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 color change of the dye when the pH of medium falls below 6,8. Lactose non-fermenting strains, such as Shigella and Salmonella are colourless, transparent and typically do not alter appearance of the medium.

Peptones are sources of nitrogen and other nutrients. Lactose is a fermentable carbohydrate, bile salts and crystal violet are selective agents that inhibit growth of Gram-positive organisms. Neutral red is the pH indicator dye.

### Quality control

The data and results of quality control are given in the certificate of analysis for each lot.

### Storage and shelf life

Storage between 15-25°C. After opening storage between 2-8°C. Use before expiry date on the label.

### Warning and precautions

In vitro diagnostic use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

### Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques.

### Symbols used on labels

| | | | |
|---|---|---|---|
| CE | European Conformity mark | | This side up |
| IVD | is an in vitro diagnostic medical device (IVD) | REF | Catalogue number |
| | Do not expose directly to sunlight | LOT | Batch code |
| | Consult instructions for use | | Use-by date |
| | Do not re-use | | Temperature limit |
| | Pack size | | Manufacturer |
| EC REP | European Authorized Representative (Authorised Representative) | | |

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|---|---|
| EC REP | Salus Cons kft. 6722 Szeged, Bécsi krt 23, HUNGARY<br>e-mail: office@saluscons.com |

### Reference


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