Technical Data Sheet

# ReadyPlate™ CT
# VRBG (Violet Red Bile Glucose) Agar
# acc. ISO 21528

## Ordering number: 1.46253.0020

VRBD (Violet Red Bile Dextrose) Agar is used for selective isolation of *Enterobacteriaceae* or bile tolerant gram-negative bacteria from non-sterile pharmaceutical products, foodstuffs and other sample material.

The formulation of the medium is prepared according to the recommendations of the current ISO 21528.

### Mode of Action

Crystal violet and bile salts inhibit the accompanying bacterial flora. Degradation of glucose is accompanied by production of acid, which is indicated by a color change to red and by zones of precipitated bile acids surrounding the colonies. All *Enterobacteriaceae* are detected as they all degrade glucose to acid. The culture medium is not, however, absolutely specific for these organisms as some other accompanying bacteria (e.g. *Aeromonas*) also show these reactions

### Typical Composition

| **Specified by ISO 21528** | | **ReadyPlate™ CT VRBG** | |
|---|---|---|---|
| Enzymatic Digest of Animal Tissues | 7 g/l | Pancreatic Digest of Gelatin (Enzymatic Digest of Animal Tissues) | 7 g/l |
| Yeast Extract | 3 g/l | Yeast Extract | 3 g/l |
| Bile Salts No. 3 | 1.5 g/l | Bile Salts | 1.5 g/l |
| NaCl | 5 g/l | NaCl | 5 g/l |
| Glucose | 10 g/l | D(+)-Glucose | 10 g/l |
| Neutral Red | 0.03 g/l | Neutral Red | 0.03 g/l |
| Crystal Violet | 0.002 g/l | Crystal Violet | 0.002 g/l |
| Agar | 9-18 g/l | Agar-Agar | 15 g/l |
| Water | 1000 ml/l | Water | 1000 ml/l |
| pH at 25 ℃ | 7.4 ± 0.2 | pH at 25 ℃ | 7.4 ± 0.2 |

## Application and Interpretation

Each plate is provided with a label including a data matrix code for paperless plate identification. The code consists of a two-dimensional 20-digit serial number, which harbors the following information:

Digits 1-3: here code 869 (corresponds to article 146253); digits 4-9: lot number; digits 10-14: batch specific individual number; digits 15-20: expiration date (YY/MM/DD).

Please check each agar plate on sterility before using it and pay attention to aseptic handling in order to avoid false positive results.

According to ISO 21528-1 for detection or enumeration of *Enterobacteriaceae* within foodstuff using the MPN method, the samples are diluted and enriched in Buffered Peptone Water. After incubation at 37 (or 30) ℃ for 16-20 h, each enrichment culture is streaked for isolation onto VRBG Agar and incubated aerobically for 22-26 hours at 37 (or 30) ℃.

For colony count of *Enterobacteriaceae* in food according to ISO 21528-2 serial dilutions of the sample are prepared. 1 ml volumes of appropriate dilutions are plated by Pour Plate method. After solidification of the VRBG Agar a cover layer may be added. The plates are incubated for 22-26 hours at 37 (or 30) ℃.

*Enterobacteriaceae* create characteristic pink or red colonies with or without precipitation zone. Some *Enterobacteriaceae* may grow to colorless or white colonies.

Suspect colonies (or a representative proportion thereof) may subjected to confirmatory tests.

The confirmation tests for suspect colonies are described within ISO 21528.

## Storage and Shelf Life

The product can be used for tests until the expiry date if stored upright, protected from light and properly sealed at +15 ℃ to +25 ℃. Shelf life is 180 days.

The testing procedures as described on the CoA can be started up to the expiry date printed on the label.

Condensation can be prevented by avoiding quick temperature shifts and mechanical stress.

## Disposal

Please mind the respective regulations for the disposal of used culture medium (e.g. autoclave for 20 min at 121 ℃, disinfect, incinerate etc.).

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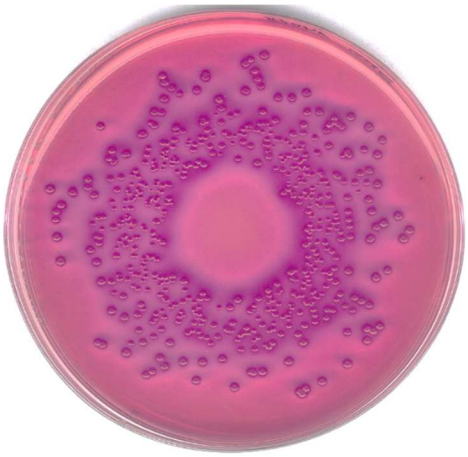
## Quality Control

| Function | Control strains | Incubation | Reference medium | Method of control | Expected results |
|---|---|---|---|---|---|
| Productivity | *Escherichia coli* ATCC 8739 | 22-26 h at 36-38 °C | Tryptic Soy Agar (TSA) | Quantitative | Recovery ≥50 %, pink to red colonies with or without precipitation halo |
| | *Escherichia coli* ATCC 25922 | | | | |
| | *Salmonella* Typhimurium ATCC 14028 | | | | |
| | *Salmonella* Enteritidis ATCC 13076 | | | | |
| Selectivity | *Enterococcus faecalis* ATCC 19433 | 22-26 h at 36-38 °C | Tryptic Soy Agar (TSA) | Qualitative | Total inhibition |
| | *Enterococcus faecalis* ATCC 29212 | | | | |

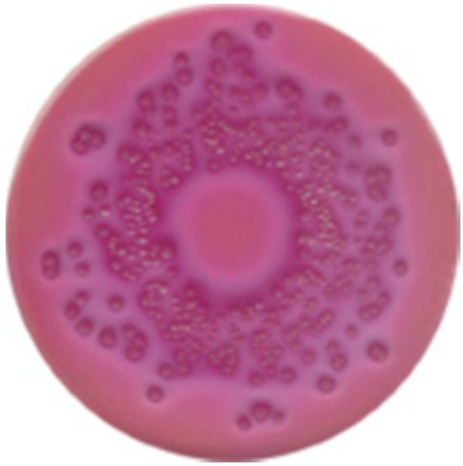
Please refer to the actual batch related Certificate of Analysis.

The performance test is in accordance with the current version of EN ISO 11133

A recovery rate of 50 % is equivalent to a productivity value of 0.5.



*Salmonella* Typhimurium ATCC 14028



*Escherichia coli* ATCC 8739

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## Literature

ISO 21528-1:2004 / DIS:2014: Microbiology of food and animal feeding stuffs – Horizontal methods for the detection and enumeration of *Enterobacteriaceae* – Part 1: Detection and enumeration by MPN technique with pre-enrichment.

ISO 21528-2:2008 / DIS:2014: Microbiology of food and animal feeding stuffs – Horizontal methods for the detection and enumeration of *Enterobacteriaceae* – Part 2: Colony-count method.

ISO 11133:2014: Microbiology of food and animal feed and water – Preparation, production, storage and performance testing of culture media

Official Journal of the European Union L338/1-26 (2005): Commission Regulation (EC) No 2073/2005 on microbiological criteria for foodstuffs.

PDA Technical Report No. 13 (2014 Revised): Fundamentals of an Environmental Monitoring Program.

## Ordering Information

| Product | Cat. No. | Pack size | Other pack sizes available |
|---|---|---|---|
| ReadyPlate™ CT VRBG Agar ISO 21528 | 1.46253.0020 | 20 x 55 mm | |
| ReadyPlate™ VRBG Agar ISO 21528 | 1.46127.0020 | 20 x 90 mm | 100 x 90 mm |
| GranuCult™ VRBD Agar EP, USP, JP ISO 21528 | 1.10275.0500 | 500 g | |
| GranuCult™ EE Mossel Broth acc ISO | 1.05394.0500 | 500 g | 5 kg |
| ReadyTube™ 9 BPW ISO 6579, 6887, 21528 | 1.46142.0020 | 20 x 9 ml | 100 x 9 ml, 6 x 225 ml, 6 x 1000 ml, 1 x 2000 ml |
| GranuCult™ BPW ISO 6579, ISO 21528, ISO 22964 FDA-BAM EP | 1.07228.0500 | 500 g | 5 kg, 25 kg |
| GranuCult™ Nutrient Agar ISO 6579, ISO 10273 ISO 21528 | 1.05450.0500 | 500 g | |
| Bactident® Oxidase | 1.13300.0001 | 50 strips | |

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