

BRILLIANT GREEN AGAR (EDEL & KAMPELMACHER)

DETECTION OF *SALMONELLA*

1 INTENDED USE

Brilliant Green agar according to Edel & Kampelmacher is a selective medium used to isolate *Salmonella* in food products including dairy products.

This media can also be used as a second isolation media in the context of the various normalized methods for the detection of *Salmonella* spp.

2 HISTORY

In 1925, Kristensen, Lester and Jurgens described this medium, later modified by Kauffmann and then at the Rijks Instituut voor de Volksgezondheid in Utrecht, under the responsibility of Edel and Kampelmacher.

3 PRINCIPLES

The medium contains two carbohydrates, lactose and sucrose for which the fermentation of either results in a decrease in pH. This results in the appearance of yellow-green colonies in the presence of the pH indicator, phenol red.

Brilliant green inhibits Gram-positive bacteria and most Gram-negative bacteria.

In comparison to the Kristensen medium, this medium was enriched with nutritive factors and inhibiting power was reduced.

4 TYPICAL COMPOSITION

The composition can be adjusted in order to obtain optimal performance.

For 1 liter of media :

- Tryptone	10,0 g
- Meat extract.....	5,0 g
- Yeast extract	3,0 g
- Lactose.....	10,0 g
- Sucrose	10,0 g
- Disodium phosphate	1,0 g
- Monosodium phosphate.....	0,6 g
- Phenol red	90,0 mg
- Brilliant green	5,0 mg
- Bacteriological agar.....	14,0 g

pH of the ready-to-use media at 25 °C : 6,9 ± 0,2.

5 PREPARATION

- Dissolve 53,7 g of dehydrated media (BK091) in 1 liter of distilled or demineralized water.
- Slowly bring to boiling, stirring with constant agitation until complete dissolution.
- Do not autoclave.
- Cool and maintain the media in a molten state at 44-47 °C.
- Pour into sterile Petri plates and let solidify on a cool, flat surface.

✓ **Reconstitution :**
53,7 g/L

✓ **Sterilization :**
Do not autoclave

6 INSTRUCTIONS FOR USE

- Dry the plates in an incubator with the covers partially removed.
- Inoculate by streaking in plates with the enrichment media used for the detection of *Salmonella*.
- Incubate at 37 °C for 20 to 24 hours and, if necessary, up to 48 hours.

✓ **Inoculation :**
Surface streaking

✓ **Incubation :**
20 h to 48 h at 37 °C

7 RESULTS

Salmonella, the vast majority lactose and sucrose negative, produce colorless to pinkish colonies, smooth, surrounded by a red zone in the media.

The appearance of the other bacteria able to grow on the media are as follows :

Characteristics	Microorganisms
Pink colonies without proliferation	<i>Proteus</i>
Small pink colonies	<i>Pseudomonas</i>
Greenish-yellow colonies surrounded by a yellow zone in the medium	<i>Escherichia</i> , <i>Citrobacter</i> , <i>Klebsiella</i> , <i>Enterobacter</i> (lactose/sucrose-positive)
Cultures totally or almost totally inhibited	Gram positive bacteria

See ANNEX 1 : PHOTO SUPPORT.

8 QUALITY CONTROL

Dehydrated media : pinkish powder, free-flowing and homogeneous.

Prepared media : orange-brown agar.

Typical culture response after 24 hours of incubation at 37 °C, qualitative method :

Microorganisms		Growth	Characteristics
<i>Salmonella</i> Typhimurium	WDCM 00031	Good, score 2	Pink colonies
<i>Salmonella</i> Enteritidis	WDCM 00030	Good, score 2	Pink colonies
<i>Enterococcus faecalis</i>	WDCM 00087	Inhibited, score 0	-
<i>Staphylococcus aureus</i>	WDCM 00034	Inhibited, score 0	-

9 STORAGE / SHELF LIFE

Dehydrated media : 2-30 °C.

The expiration date is indicated on the label.

Prepared media in plates (*) : 30 days at 2-8 °C.

(*) Benchmark value determined under standard preparation conditions, following manufacturer's instructions.

10 PACKAGING

Dehydrated media :

500 g bottle BK091HA

11 BIBLIOGRAPHY

Kristensen, M., Lester, V., and Jurgens, A.. 1925. Use of trypsinized casein, brom-thymol blue, brom-cresol purple, phenol-red and brilliant green for bacteriological nutrient media. British Journal of Experimental Pathology, **6** : 291-299.

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NF EN ISO 19250. Juin 2013. Qualité de l'eau. Recherche de *Salmonella* spp.

NF EN ISO 6579-1. Avril 2017. Microbiologie de la chaîne alimentaire - Méthode horizontale pour la recherche, le dénombrement et le sérotypage des *Salmonella* - Partie 1 : recherche des *Salmonella* spp..

12 ADDITIONAL INFORMATION

The information provided on the labels take precedence over the formulations or instructions described in this document and are susceptible to modification at any time, without warning.

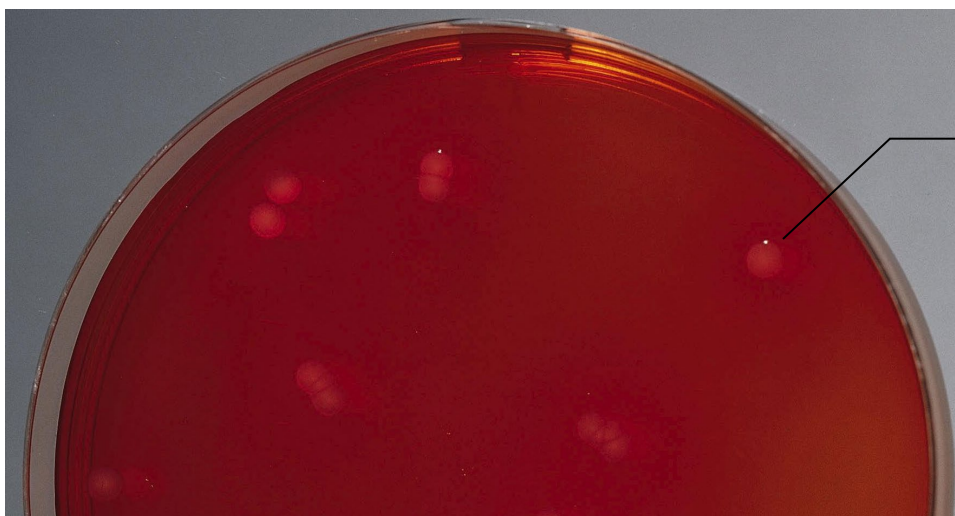
Document code : BRILLIANT GREEN EDEL KAMPELMACHER_ENV11.
Creation date : 06-2003
Updated : 05-2021
Origin of revision : pH change

Brilliant Green Agar (acc. to Edel & Kampelmacher)

Detection of Salmonella

Results :

Growth obtained after 24 hours of incubation at 37 °C.



Salmonella Typhimurium

Characteristic colony :
Colorless to pink surrounded by a
red zone in the media.