COMPASS *ENTEROCOCCUS* AGAR

INTENDED USE

COMPASS *Enterococcus* Agar is a selective media used for the enumeration of enterococci in food products.

HISTORY

Enterococci are used as indicator organisms for fecal contamination, and it has been demonstrated that the majority of strains produce a β-D glucosidase enzyme. The major emphasis of frequently used media up to this point has focused on esculin (6-7 dihydroxycoumarine-6-glucoside) which is hydrolyzed by the β-D glucosidase, resulting in 2 degradation products : l'esculetin and glucose. Esculetin produces a black-brown precipitate in the presence of iron ions contained in the medium, causing a positive reaction with enterococci, but also with other unwanted secondary microorganisms. Indeed, a certain number of contaminating microorganisms can lead to a relatively high false positive level, necessitating a significant number of confirmatory tests for all characteristic colonies.

The use of chromogenic or fluorogenic substrates for the detection of the glucosidic activity, as a means for enterococcal detection, has been studied by various authors such as Dufour in 1980, Littel & Hartmann in 1983, and Hernandez *et al*. in 1993. The association between X-glucoside and a judicious mixture of selective agents in the formulation of COMPASS *Enterococcus* Agar allows for a direct result by characteristic colony count after only 24 hours of incubation, without confirmation.

PRINCIPLES

- Peptones, yeast extract and Tween 80 stimulate enterococci growth.
- Yeast extract is also a source of complex vitamin B.
- Sodium chloride maintains osmotic equilibrium.
- The choice of incubation temperature, at 44°C, associated with a mixture of selective agents in the formulation, inhibits the secondary microflora.
- X-glucoside permits the chromogenic revelation of the β-glucosidase activity in enterococci. This results in blue colonies after hydrolysis of the 5-bromo-4-chloro-3-indolyl-β-glucoside substrate.

PREPARATION

- Suspend 52.9 g of dehydrated media in 1 liter of distilled or deionized water.
- Slowly bring to boiling, stirring with constant agitation until complete dissolution.
- Dispense into tubes or vials.
- Sterilize in an autoclave at 121°C for 15 minutes.

Biokar Diagnostics – Rue des Quarante Mines – ZAC de Ther – Allonne – B.P. 10245 – F60002 Beauvais Cedex – France
Tél : + 33 (0)3 44 14 33 33 – Fax : + 33 (0)3 44 14 33 34 – www.biokar-diagnostics.com

NOTE :

A partial liquefaction of the agar will inevitably lead to a significant modification in the gel strength of the solidified media, after sterilization and cooling.

INSTRUCTIONS FOR USE

- With ready-to-melt media BM116 (or with media prepared in advance from the dehydrated base), melt the medium with the minimum amount of time necessary in order to achieve total liquefaction.
- Cool and maintain the medium at 44-47°C.
- Transfer 1 mL of the product to analyze and its serial tenfold dilutions to sterile Petri dishes.
- Pour in 15 mL of medium.
- Homogenize by swirling.
- Let solidify on a cold surface.
- Incubate at 44°C for 24 hours.

RESULTS

Count blue colonies in plates not exceeding 150 colonies.

TYPICAL COMPOSITION

(can be adjusted to obtain optimal performance)

For 1 liter of medium :

- Peptones ..... 27,5 g
- Yeast extract ..... 5,0 g
- Sodium chloride ..... 5,0 g
- Tween 80 ..... 1,0 g
- Selective agents ..... 0,3 g
- X-glucoside ..... 0,1 g
- Bacteriological agar ..... 14,0 g

pH of the ready-to-use media at 25°C : 7.5 ± 0.2.

QUALITY CONTROL

- Dehydrated media : white powder, free-flowing and homogeneous.
- Prepared media : amber agar.
- Typical cultural response after 24 hours incubation at 44°C :

Microorganisms		Growth (Productivity ratio P_R)	Characteristics
Enterococcus faecalis	ATCC® 29212	$P_R \geq 70\%$	blue colonies
Enterococcus faecium	ATCC 19434	$P_R \geq 70\%$	blue colonies
Escherichia coli	ATCC 25922	inhibited, score 0	
Staphylococcus aureus	ATCC 25923	inhibited, score 0	

Biokar Diagnostics – Rue des Quarante Mines – ZAC de Ther – Allonne – B.P. 10245 – F60002 Beauvais Cedex – France
Tél : + 33 (0)3 44 14 33 33 – Fax : + 33 (0)3 44 14 33 34 – www.biokar-diagnostics.com

STORAGE / SHELF LIFE

Dehydrated medium : 2-30°C.
- The expiration date is indicated on the label.

Prepared medium (benchmark value*****) **:**
- Media in tubes or vials : 6 months at 2-8°C.

Ready-to-melt media in vials :
- Store between 2-8°C, shielded from light.
- The expiration date is indicated on the label.

PACKAGING

	Code
Ready-to-melt media in vials :	
- 10 x 100 mL	BM11608
Dehydrated medium:	
- 500 g bottle	BK183HA

BIBLIOGRAPHY

Dufour, A.P. 1980. A 24-hour membrane filter procedure for enumerating enterococci. 80th Am. Soc. Microb., Washington, D.C., USA. Abstr. Q-69: 205.

Littel, K., and P.A. Hartmann. 1983. Fluorogenic selective and differential medium for isolation of faecal streptococci. Appl. Environ. Microbiol., 45: 622-627.

Hernandez J.F., A.M. Pourcher, J.M., Delattre J.M., C. Oger , and J.L. Loeuillard. 1993. MPN Miniaturized procedure for the enumeration of faecal enterococci in fresh and marine waters, The must procedure. Wat. Res., 27: 597-606.

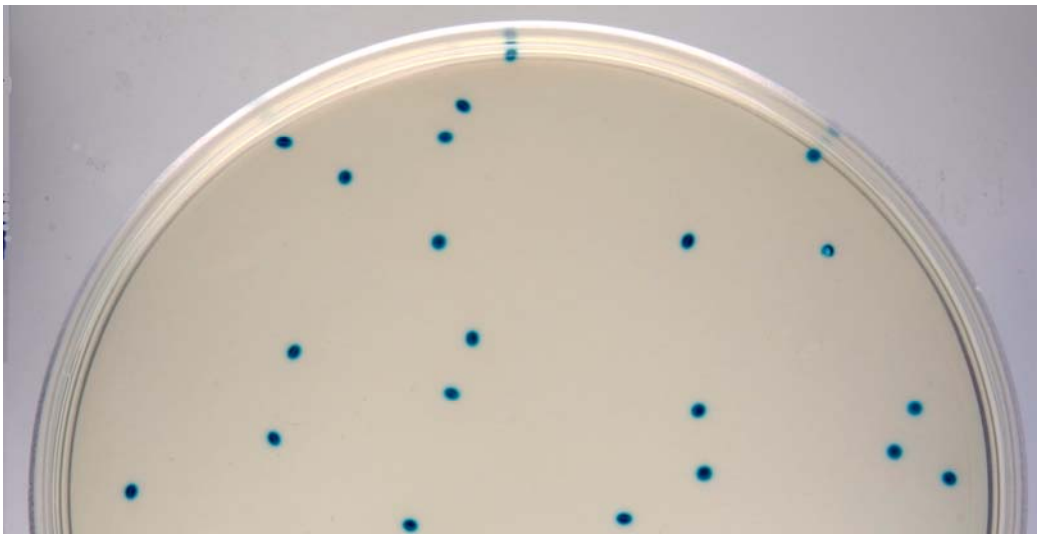
XP CEN ISO/TS 11133-2. Janvier 2004. Microbiologie des aliments. Guide pour la préparation et la production des milieux de culture. Partie 2 : guide général pour les essais de performance des milieux de culture.

Biokar Diagnostics – Rue des Quarante Mines – ZAC de Ther – Allonne – B.P. 10245 – F60002 Beauvais Cedex – France
Tél : + 33 (0)3 44 14 33 33 – Fax : + 33 (0)3 44 14 33 34 – www.biokar-diagnostics.com

PHOTO SUPPORT :

Reference : BK183HA, BM11608

Media used for : The selective enumeration of enterococci in food products.



Enterococcus faecalis

COMPASS *Enterococcus* Agar
Ref : BM11608
Incubation : 24 heures / 44°C (pour plate)
Characteristics : blue-green colonies (resulting from precipitation of the chromogenic substrate in the center of the colony after hydrolysis by the β-glucosidase enzyme).

*****Benchmark value refers to the expected value under standard laboratory conditions following manufacturer's instructions. It is provided as a guide only and no warranty, implied or otherwise is associated with this information.

The information provided on the package take precedence over the formulations or instructions described in this document.
The information and specifications contained in this technical data sheet date from 2009-02-17.
They are susceptible to modification at any time, without warning.
Code document : BK183/A/2005-05 : 4.

Biokar Diagnostics – Rue des Quarante Mines – ZAC de Ther – Allonne – B.P. 10245 – F60002 Beauvais Cedex – France
Tél : + 33 (0)3 44 14 33 33 – Fax : + 33 (0)3 44 14 33 34 – www.biokar-diagnostics.com