

Technical Data Sheet

ReadyPlate™ MYP (Mannitol Egg Yolk Polymyxin) Agar (Base) acc.
ISO 7932, ISO 21871 and FDA-BAM
Ordering number: 1.46160.0020

For the confirmation and enumeration of colonies of *Bacillus cereus* from foodstuff.

The composition of MYP Agar complies with ISO 7932, ISO 21871 and FDA-BAM.

Mode of Action

The MYP agar differentiates *B. cereus* from other bacteria by its resistance to Polymyxin B, its inability to produce acids from mannitol and the presence of a (strong) lecithinase. Peptone and meat extract are sufficient carbon and nitrogen sources for *B. cereus*. Bacteria which ferment mannitol to produce acids produce a yellow staining of the medium with phenol red as a pH indicator. The lecithin present in egg yolk is cleaved by the *B. cereus*-lecithinase, which leads to the formation of an opalescent white precipitation zone surrounding the colonies. Since *B. cereus* is mannitol-negative, the agar around colonies remains unchanged or is discolored by light alkalization (pink colonies). *E. coli*, other *Enterobacteriaceae* and *P. aeruginosa* are inhibited by Polymyxin B.

Typical Composition

Specified by ISO 7932, ISO 21871		Specified by FDA-BAM		ReadyPlate™ MYP Agar	
Beef Extract	1 g/l	Beef Extract	1 g/l	Meat Extract	1 g/l
Enzymatic Digest of Casein	10 g/l	Peptone	10 g/l	Enzymatic Digest of Casein	10 g/l
D-Mannitol	10 g/l	Mannitol	10 g/l	D(-)-Mannitol	10 g/l
NaCl	10 g/l	NaCl	10 g/l	NaCl	10 g/l
Phenol Red	0.025 g/l	Phenol Red	0.025 g/l	Phenol Red	0.025 g/l
Agar	12-18 g/l	Agar	15 g/l	Agar	15 g/l
Polymyxin B Sulfate	10 ⁵ IU	Polymyxin B Sulfate	10 ⁵ IU	Polymyxin B Sulfate	10 ⁵ IU
Egg Yolk Emulsion 20%	100 ml/l	Egg Yolk Emulsion 50%	50 ml/l	Egg Yolk Emulsion 20%	100 ml/l
Water	900 ml/l	Water	900 ml/l	Water	900 ml/l
pH at 25 °C	7.2 ± 0.2	pH at 25 °C	7.2 ± 0.2	pH at 25 °C	7.2 ± 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 216 (corresponds to article 146160); 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 before using it on sterility and pay attention to aseptic handling in order to avoid false positive results.

The plates are incubated aerobically for 18-24 h to 40-48h h at 29-31 °C.

B. cereus cannot be distinguished from *B. thuringiensis* on this and other media. However, only *B. cereus* acts as a human-pathogenic food toxicant. Both species produce a strong β -hemolysis e.g. on sheep blood agar (article number 146740) and are penicillin-resistant. A biochemical differentiation is possible for example with the test kits API 50CHB or API 20E. On the MYP agar, the probiotic *B. cereus* preparations Toyocerin® and Paciflor® grow just as *B. cereus* wild type strains.

Storage and Shelf Life

The product can be used for sampling until the expiry date if stored upright, protected from light and properly sealed at +2 °C to +8 °C.

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

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

Disposal

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

Quality Control

Function	Control strains	Incubation	Reference medium	Method of control	Expected results
Productivity	<i>Bacillus cereus</i> ATCC® 11778	21-27 h to 40-48 h at 29-31 °C	Tryptic Soy Agar (TSA)	Quantitative	Recovery $\geq$ 50 %, pink colonies with precipitation halo
Selectivity	<i>Escherichia coli</i> ATCC® 8739	40-48 h at 29-31 °C	-	Qualitative	Total inhibition
	<i>Escherichia coli</i> ATCC® 25922				
Specificity	<i>Bacillus subtilis</i> ATCC® 6633	40-48 h at 29-31 °C	-	Qualitative	Yellow colonies without precipitation halo

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.

Literature

Donovan, K.O. (1958): A selective medium for *Bacillus cereus* in milk. J. Appl. Bacteriol. **21**:

100-103. FDA BAM Chapter 14, February 2012: *Bacillus cereus*

FDA-BAM Media M95 (1998): Mannitol-Egg Yolk-Polymyxin (MYP) Agar

ISO 7932:2004: Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of presumptive *Bacillus cereus* -- Colony-count technique at 30 °C

ISO 21871:2006: Microbiology of food and animal feeding stuffs -- Horizontal method for the determination of low numbers of presumptive *Bacillus cereus* -- Most probable number technique and detection method.

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

Mossel, D.A.A., Koopman, M.J. and Jongerius, E. (1967): Enumeration of *Bacillus cereus* in foods. Appl. Microbiol. **15**: 650-653.

Ordering Information

Product	Cat. No.	Pack size
ReadyPlate™ MYP ISO 7932, 21871	1.46160.0020	20 x 90 mm
ReadyPlate™ PEMBA ISO 21871	1.46711.0100	100 x 90 mm
GranuCult™ MYP Agar (Base)	1.05267.0500	500 g
Egg Yolk Emulsion sterile	1.03784.0001	10 x 100 ml
Bacillus Cereus Selective Supplement	1.09875.0010	10 x 1 vial

ReadyPlate, Merck, Millipore, and Sigma-Aldrich are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. Detailed information on trademarks is available via publicly accessible resources.
© 2019 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved.

Lit.No. MK_PF6677EN

The Life science business of Merck operates as MilliporeSigma in the U.S. and Canada