

Technical Data Sheet

GranuCult™

Plate Count Agar

acc. ISO 4833, ISO 17410 and FDA-BAM

Ordering number: 1.05463.0500 / 1.05463.5000

For the determination of the total microbial content from food and animal feed, water and other materials. This culture medium complies with the specifications given by EN ISO 4833, ISO 17410, FDA-BAM and APHA (SMA: Standard Methods Agar).

Plate Count Agar is also called Tryptone Glucose Yeast Agar or Casein-Peptide Dextrose Yeast Agar.

Mode of Action

This medium does not contain any inhibitors or indicators and it is relatively rich in its nutrients. The enzymatic digest of casein (tryptone) is a nitrogen source containing a high level of free amino acids and yeast extract primarily supplies the B-complex vitamins. Glucose provides an energy source for the growth of bacteria whilst agar is the solidifying agent.

Typical Composition

Specified by ISO 4833, ISO 17410		Specified by BAM M124, APHA		GranuCult™ Plate Count Agar acc. ISO 4833, ISO 17410 and FDA-BAM	
Enzymatic Digest of Casein	5 g/l	Tryptone	5 g/l	Enzymatic Digest of Casein**	5 g/l
Yeast Extract	2.5 g/l	Yeast Extract	2.5 g/l	Yeast Extract	2.5 g/l
Glucose*	1 g/l	Dextrose	1 g/l	D(+)-Glucose	1 g/l
Agar	9-18 g/l	Agar	15 g/l	Agar-Agar***	14 g/l
Water	1000 ml/l	Water	1000 ml	Water	n/a
pH at 25 °C	7.0 ± 0.2	pH at 25 °C	7.0 ± 0.2	pH at 25 °C	7.0 ± 0.2

* ISO 4833 specifies Glucose anhydrous (1 g/l), ISO 17419 specifies Glucose (1 g/l).

** Enzymatic digest of casein is equivalent to tryptone.

*** Agar-Agar is equivalent to other different terms of agar.

Preparation

Dissolve 22.5 g in 1 l of purified water. Heat in boiling water and agitate frequently until completely dissolved. Autoclave 15 min at 121 °C.

If the medium is to be used immediately for poured plate technique, cool it to 44-47 °C in a water bath before use. Use the molten medium as soon as possible, it should not be retained for more than 4 h, as specified by EN ISO 4833 and EN ISO 11133.

If the medium is used for surface plating technique, there should be no visible moisture on the plates before use. When moisture is present, the plates should be dried for the minimum time required to remove visible moisture, following the procedure as described by EN ISO 11133.

The prepared medium is clear and yellowish. The pH value at 25 °C is in the range of 6.8-7.2.

When dairy products are examined, add skim milk powder at 1 g/l of the culture medium prior to sterilization. The skimmed milk powder shall be free from inhibitory substances. GranuCult™ Plate Count Skimmed Milk Agar (article number 115338) already contains skim milk powder free from inhibitors.

Experimental Procedure and Evaluation

Depend on the purpose for which the medium is used.

Incubate the inoculated plates under aerobic conditions. e.g. acc. to EN ISO 4833 at 29-31 °C for 69-75 h, acc. to ISO 117410 at 5.5-7.5 °C for 10 days, acc. to APHA at 35 °C for 48 h.

Storage

Store at +15 °C to +25 °C, dry and tightly closed. Do not use clumped or discolored medium. Protect from UV light (including sun light). For *in vitro* use only.

According to EN ISO 4833-2, self-prepared plates can be stored at +2 to +8 °C in the dark and protected against evaporation for up to four weeks. Self-prepared bottled medium can be stored at +2 to +8 °C in the dark for no longer than three months according to EN ISO 4833-1.

Quality Control

Function	Control strains	Incubation	Reference medium	Method of control	Expected results
Productivity	<i>Bacillus subtilis</i> subsp. <i>spizizeni</i> ATCC® 6633	69 - 75 h at 29-31 °C	Tryptic Soy Agar (TSA)	Quantitative by poured plating technique	Recovery ≥ 70 %
	<i>Escherichia coli</i> ATCC® 8739				
	<i>Escherichia coli</i> ATCC® 25922				
	<i>Staphylococcus aureus</i> ATCC® 6538			Quantitative by surface plating technique	Recovery ≥ 70 %
	<i>Staphylococcus aureus</i> ATCC® 25923				
	<i>Lactococcus lactis</i> spp. <i>lactis</i> ATCC® 19435				
	<i>Listeria monocytogenes</i> ATCC® 19111	22-26 h at 36-38 °C	Tryptic Soy Agar (TSA)	Quantitative by surface plating technique	Recovery ≥ 70 %
	<i>Acidophilus acidophilus</i> ATCC® 4356				
	<i>Bacillus subtilis</i> subsp. <i>spizizeni</i> ATCC® 6633				
	<i>Escherichia coli</i> ATCC® 8739			Quantitative by surface plating technique	Recovery ≥ 70 %
	<i>Escherichia coli</i> ATCC® 25922				
	<i>Staphylococcus aureus</i> ATCC® 6538				
	<i>Staphylococcus aureus</i> ATCC® 25923				

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 70 % is equivalent to a productivity value of 0.7.



Bacillus cereus ATCC® 11778

Literature

APHA (2015) Compendium of Methods for the Microbiological Examination of Foods. 5th ed. American Public Health Association, Washington, D.C.

APHA (2004) Standard Methods for the Examination of Dairy Products. 17th ed. American Public Health Association, Washington, D.C.

APHA (2012) Standard Methods for the Examination of Water. 22nd ed. American Public Health Association, American Water Works Association, Water Environment Federation, Washington, D.C.

FDA-BAM (2001) Chapter No. 2: Aerobic Plate Count. U.S. Food and Drug Administration - Bacteriological Analytical Manual.

ISO International Standardisation Organisation. Microbiology of the food chain -- Horizontal method for the enumeration of microorganisms - Part 1: Colony count at 30 °C by the pour plate technique. EN ISO 4833-1:2013.

ISO International Standardisation Organisation. Microbiology of the food chain -- Horizontal method for the enumeration of microorganisms - Part 2: Colony count at 30 °C by the surface plating technique. EN ISO 4833-1:2013.

ISO International Standardisation Organisation. Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of psychrotrophic microorganisms. ISO 17410:2001.

ISO International Standardisation Organisation. Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media. EN ISO 11133:2014.

Ordering Information

Product	Cat. No.	Pack size	Other pack sizes
GranuCult™ Plate Count Agar acc. ISO 4833, ISO 17410 and FDA-BAM	1.05463.0500	500 g	available 5 kg
Skim Milk Powder	1.15363.0500	500 g	
GranuCult™ Plate Count Skimmed Milk Agar acc. ISO 4833 and ISO 17410	1.15338.0500	500 g	
Plate Count Agar	1.46269.0020	20 plates	100 plates

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