Technical Data Sheet

GranuCult™
Lauryl Sulfate Broth
acc. ISO 4831, ISO 7251 and FDA-BAM

Ordering number: 1.10266.0500 / 1.10266.5000

For the selective enrichment and presumptive detection of coliform bacteria from food and animal feed, water and other materials.

This culture medium complies with the specifications given by ISO 4831, ISO 7251, FDA-BAM and APHA.

Mode of Action

The high nutrient quality and the presence of phosphate buffer in this medium ensure rapid growth and increased gas production of even "slowly lactose-fermenting" coliform bacteria. Gas formation can be detected by using Durham tubes. The lauryl sulfate largely inhibits the growth of undesired bacteria.

Typical Composition

Specified by ISO 4831, ISO 7251		**Specified by BAM M76**		**GranuCult™ Lauryl Sulfate Broth acc. ISO 4831, ISO 7251 and FDA-BAM**	
Enzymatic Digest of Milk and Animal Proteins	20 g/l	Tryptose or Trypticase	20 g/l	Enzymatic Digest of Animal and Plant Tissues*	20 g/l
Lactose	5 g/l	Lactose	5 g/l	Lactose	5 g/l
K_2HPO_4	2.75 g/l	K_2HPO_4	2.75 g/l	K_2HPO_4	2.75 g/l
KH_2PO_4	2.75 g/l	KH_2PO_4	2.75 g/l	KH_2PO_4	2.75 g/l
NaCl	5 g/l	NaCl	5 g/l	NaCl	5 g/l
Sodium Lauryl Sulfate	n/a	Sodium Lauryl Sulfate	0.1 g/l	Sodium Lauryl Sulfate	0.1 g/l
Water	1000 ml/l	Water	1000 ml/l	Water	n/a
pH at 25 ℃	6.8 ± 0.2	pH at 25 ℃	6.8 ± 0.2	pH at 2 5 ℃	6.8 ± 0.2

* Enzymatic digest of animal and plant tissues is equivalent to tryptose.

Preparation

Dissolve 35.6 g in 1 l of purified water. Dispense into tubes containing Durham tubes. Autoclave 15 min at 121 ℃. The Durham tubes shall not contain any a ir bubbles after autoclaving.

The prepared medium is clear and yellowish-brown. The pH value at 25 ℃ is in the range of 6.6-7.0.

Experimental Procedure and Evaluation

Depend on the purpose for which the medium is used.

Incubate the inoculated tubes under aerobic conditions, e.g. acc. to ISO 4831 at 29-31 ℃ or at 36-38 ℃ (or as specified) for 22-26 h or, if neith er gas formation nor opacity preventing the gas formation is observed at this stage, for 46-50 h.

Formation of gas is shown in the inverted Durham tubes.

Inoculum (ml per tube)	Amount of medium (ml per tube)	Total volume (ml per tube)	Dehydrated lauryl sulfate broth required	Broth concentration
≤ 1	10	≤ 11	35.6 g/l	1-fold
1-10	10	20	71.2 g/l	2-fold

Storage

Store at +15 ℃ to +25 ℃, 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 Corry et al. (2012), self-prepared medium in screw-capped containers can be stored at +2 ℃ to +8 ℃ in the dark and for up to one month.

Quality Control

Function	Control strains	Incubation	Method of control	Expected results
Productivity	*Escherichia coli* ATCC® 8739	22-26 h at 29-31 ℃ aerobic	Qualitative	Growth (good turbidity) and gas formation in the Durham tube: gas production and turbidity
	Escherichia coli ATCC® 25922			
	Citrobacter freundii ATCC® 43864			
	Escherichia coli ATCC® 8739	22-26 h at 36-38 ℃ aerobic		
	Escherichia coli ATCC® 25922			
Selectivity	*Enterococcus faecalis* ATCC® 19433	46-50 h at 29-31 ℃ aerobic	Qualitative	Total inhibition without gas production
	Enterococcus faecalis ATCC® 29212			
	Enterococcus faecalis ATCC® 19433	46-50 h at 36-38 ℃ aerobic		
	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.

Literature

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.

Corry, J.E.L., Curtis, G.D.W. and Baird, R.M. (2012): Handbook of Culture Media for Food and Water Microbiology, pp. 805-807. Royal Society of Chemistry, Cambridge, UK.

FDA-BAM (2002): Chapter No. 4: Enumeration of Escherichia coli and the Coliform Bacteria. U.S. Food and Drug Administration – Bacteriological Analytical Manual.

ISO International Standardisation Organisation. Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of coliforms – Most probable number technique. ISO 4831:2006.

ISO International Standardisation Organisation Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of presumptive *Escherichia coli* – Most probable number technique. ISO 7251:2005.

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

Mallmann, W.L. and Darby, C.W. (1941): Use of a lauryl sulfate tryptose broth for the detection of coliform organisms. Am. J. Publ. Health. **31**: 127-134.

Ordering Information

Product	Cat. No.	Pack size
GranuCult™ Lauryl Sulfate Broth acc. ISO 4831, ISO 7251 and FDA-BAM	1.10266.0500	500 g
GranuCult™ Lauryl Sulfate Broth acc. ISO 4831, ISO 7251 and FDA-BAM	1.10266.5000	5 kg
Fluorocult® Lauryl Sulfate Broth	1.12588.0500	500 g

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