TOS Propionate Agar Base

Basal medium for detection of bifidobacteria in milk products according to ISO 29981.

TYPICAL FORMULA	(g/l)
Casein Peptone	10.0
Yeast Extract	1.0
Galactoligosaccharide TOS	10.0
Dipotassium Phosphate	4.8
Monopotassium Phosphate	3.0
Magnesium Sulfate, heptahydrated	0.2
Ammonium Sulfate	3.0
L-Cysteine HCl	0.5
Sodium Propionate	15.0
Agar	15.0
Final pH 6.7 ± 0.2 at 25°C	

DESCRIPTION

TOS Propionate Agar Base is a selective medium used with supplements for the enumeration of bifidobacteria in milk products including fermented and non-fermented milks, milk powders and infant formulae.

This medium complies with the specification given by ISO 29981/IDF 220.

PRINCIPLE

Casein peptone provides the nitrogen, vitamins, minerals and amino acids for bacterial growth. Yeast extract is a source of vitamins, particularly of B-group. Galactoligosaccharide TOS is a growth factor specific for bifidobacteria. Phosphates act as buffer. Magnesium sulfate allows the recovery of preinjured bifidobacteria. Ammonium sulfate serves as nitrogen source. L-cysteine is a reducing agent. Sodium Propionate is the selective agent inhibiting the accompanying flora. Agar is the solidifying agent.

Supplementation with Lithium-Mupirocin (MUP), contained in MUP Selective Supplement (ref. 81101), confers further selectivity against lactobacilli, lactococci, streptococci and leuconostocs. Mupirocin is so highly selective that in most cases only bifidobacteria grow with visible colonies with no need for confirmation.

PREPARATION

Suspended 62.5 g of powder in 1 liter of distilled or deionized water. Heat to boiling to dissolve completely. DO NOT OVERHEAT. Sterilize by autoclaving at 115 ± 3°C for 15 minutes. Cool the medium to 45-50°C before adding the rehydrated content of 2 vials (10 ml) of MUP Selective Supplement.

TECHNIQUE

Use 1/4 strength Ringer's solution (ref. 81059) to prepare the initial sample suspension and further decimal dilutions. Inoculate the completed TOS-MUP medium by the pour-plate method or by spreading the sample over the agar surface. NOTE: Bifidobacteria are sensitive to oxygen from air, so time from the first dilution to the agar inoculation should not exceed 15 minutes. Incubate anaerobically at 37°C for 72 ± 3 hours.

INTERPRETATION OF RESULTS

Observe colonies growth. Typically, bifidobacteria grow as white colonies of 1-4 mm diameter sizes. Count colonies on all plates containing 15-300 colonies. Report the count as CFU per ml of sample allowing for dilution factors.

STORAGE

The powder is very hygroscopic: store the powder at 10-30°C, in a dry environment, in its original container tightly closed and use it before the expiry date on the label or until sings of deterioration or contamination are evident.

WARNING AND PRECAUTIONS

The product does not contain hazardous substances in concentrations exceeding the limits set by current legislation and therefore is not classified as dangerous. it is nevertheless recommended to consult the safety data sheet for its correct us. The product is designed for professional use only and must be used by properly trained operators.

DISPOSAL OF WASTE

Disposal of waste must be carried out according to national and local regulations in force.

REFERENCES

1. ISO 29981/IDF 220: 2010. Milk products - Enumeration of presumptive bifidobacteria - Colony count technique at 37 degrees C.
2. Zitz, U., Kneifel, W., Weiss, H., Wilrich, P.-Th. (2007) Selective Enumeration of Bifidobacteria in Dairy Products: Development of a Standard Method. Bulletin Int. Dairy Fed. 411: 3-20.
3. ISO 7889/IDF 117:2003. Yogurt - Enumeration of characteristic microorganisms - Colony-count technique at 37 degrees C.

LIOFILCHEM® S.r.l.
Via Scozia, Zona Ind.le - 64026, Roseto degli Abruzzi (TE) - ITALY
Tel +39 0858930745 Fax +39 0858930330 Website: www.liofilchem.com

PRODUCT SPECIFICATIONS

NAME
TOS Propionate Agar Base

PRESENTATION
Dehydrated medium

STORAGE
10-30°C

PACKAGE

Ref.	Content	Packaging
610378	500 g	500 g of powder in plastic bottle
620378	100 g	100 g of powder in plastic bottle

pH OF THE MEDIUM
6.7 ± 0.2

USE
TOS Propionate Agar Base is a base medium used with supplement for the selective growth of bifidobacteria from milk products

TECHNIQUE
Refer to technical sheet of the product

APPEARANCE OF THE MEDIUM
Dehydrated medium
Appearance: free-flowing, homogeneous
Colour: beige
Prepared medium
Appearance: clear
Colour: amber

SHELFLIFE
4 years

QUALITY CONTROL
1. Control of general characteristics, label and print
2. Microbiological control
   Inoculum for productivity: 50-100 CFU
   Inoculum for selectivity: 10^3-10^4 CFU
   Incubation conditions: 72 ± 3 h at 37 ± 1°C under anaerobic atmosphere

Microorganism		Growth	Colony Colour
Bifidobacterium animalis subsp. *animalis*	ATCC® 25527	Good	White
Bifidobacterium animalis subsp. *lactis*	ATCC® 27536	Good	White
Lactobacillus casei	ATCC® 393	Inhibited	---

TABLE OF SYMBOLS

LOT Batch code	Keep away from heat sources	Manufacturer	Use by	Fragile, handle with care
REF Catalogue number	Temperature limitation	Contains sufficient for <n> tests	Consult instructions for use	

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