

## TECHNICAL DATA SHEET

# DESOXYCHOLATE (0,1 %) LACTOSE AGAR

### ENUMERATION OF COLIFORMS

## 1 INTENDED USE

Desoxycholate (0.1%) Lactose Agar is a selective medium for the enumeration of coliform bacteria in milk, dairy products and other food products. The medium is also recommended for the isolation and culture of *Shigella*.

## 2 HISTORY

In 1935, Leifson developed the formulation of desoxycholate lactose as a differentiation medium for enterobacteria. In contrast to prior formulas using ingredients of unknown or variable composition, this medium contained well defined chemical substances, such as desoxycholate and sodium citrate, used as inhibitors. The degree of inhibition was thus well controlled. The original formulation of Leifson was slightly modified by the use of better defined peptones, as well as by non-negligible adjustments of the inhibitory substances.

## 3 PRINCIPLES

Gram-positive bacteria are primarily inhibited by desoxycholate, although sodium citrate and ferric citrate are also effective inhibitors.

The differentiation of enterobacteria is based on their capacity to ferment lactose :

Lactose-positive strains produce acid which leads to the formation of red colonies in the presence of neutral red.

Lactose-negative bacteria (*Salmonella* or *Shigella*) yield colorless colonies.

## 4 TYPICAL COMPOSITION

The composition can be adjusted in order to obtain optimal performance.

For 1 liter of media :

- Peptic digest of meat.....	10,0 g
- Lactose.....	10,0 g
- Sodium desoxycholate .....	1,0 g
- Sodium chloride .....	5,0 g
- Dipotassium phosphate .....	2,0 g
- Ferric ammonium citrate .....	1,0 g
- Sodium citrate .....	1,0 g
- Neutral red.....	0,03 g
- Bacteriological agar.....	15,0 g

pH of the ready-to-use media at 25 °C : 7,3 ± 0,2.

## 5 PREPARATION

- Dissolve 45,0 g of dehydrated media (BK062) in 1 liter of distilled or demineralized water. .
- Slowly bring to boiling, stirring with constant agitation until complete dissolution e.
- Do not autoclave.
- Cool and maintain the media in a molten state at 44-47 °C.

✓ **Reconstitution :**  
45,0 g/L  
✓ **Sterilization :**  
Do not autoclave

## 6 INSTRUCTIONS FOR USE

- Transfer 1 mL of the product to analyze and its serial tenfold dilutions into sterile Petri plates.
- Pour in roughly 12 mL of molten agar per plate.
- Let solidify on a cold, flat surface.
- Overlay by pouring in an additional 4 mL of medium, so that a second layer is formed.
- Let solidify.
- Incubate at  $30 \pm 1$  °C or at  $37 \pm 1$  °C for 18 to 24 hours.

✓ **Inoculation :**  
1 mL in a double layer

✓ **Incubation :**  
18 to 24 h at 30 or 37 °C

## 7 RESULTS

Lactose-positive enterobacteria form red colonies with a diameter equal to or greater than 0.5 mm after 24 hours of incubation.

Lactose-negative enterobacteria give rise to colorless colonies.

## 8 QUALITY CONTROL

**Dehydrated media :** beige to pinkish powder, free-flowing and homogeneous.

**Prepared media :** red-orange agar.

Typical culture response after 24 hours of incubation at 30 °C :

Microorganisms		Growth (Productivity Ratio : $P_R$ )	Characteristic colonies
<i>Escherichia coli</i>	WDCM 00012	$P_R \geq 50$ %	Red-violet
<i>Escherichia coli</i>	WDCM 00013	$P_R \geq 50$ %	Red-violet
<i>Pseudomonas aeruginosa</i>	WDCM 00025	Good, score 2	Beige-pink
<i>Enterococcus faecalis</i>	WDCM 00087	Inhibited, score 0	-
<i>Staphylococcus aureus</i>	WDCM 00034	Inhibited, score 0	-

## 9 STORAGE / SHELF LIFE

**Dehydrated media :** 2-30 °C.

The expiration date is indicated on the label.

**Prepared media (\*) :** Use on the day of preparation.

(\*)Benchmark value determined under standard preparation conditions, following manufacturer's instructions.

## 10 PACKAGING

**Dehydrated media :**

500 g bottle ..... BK062HA

## 11 BIBLIOGRAPHY

Leifson, E. 1935. New culture media based on sodium desoxycholate for the isolation of intestinal pathogens and for the enumeration of colon bacilli in milk and water. *Journal of Pathology and Bacteriology*, **40** : 581-599.

## 12 ADDITIONAL INFORMATION

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The information provided on the labels take precedence over the formulations or instructions described in this document and are susceptible to modification at any time, without warning.

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