thermoscientific

Product Specification Sheet

Lysine Decarboxylase Broth (Taylor)

Intended Usage: A medium for the differentiation of *Enterobacteriaceae*, especially for *Salmonella* species.

For professional use only.

	TV5028N
Version: 06	Revision Date: 20 May 2020

Thermo Scientific™ Lysine Decarboxylase Broth (Taylor)

Form of Product	Poured tube
Storage	2 – 12°C, dark
Filling weight	5.5 – 6.5 g
Packaging	50 tubes in a box
pH	6.8 ± 0.2
Appearance	Pearl violet, transparent
Shelf life	32 weeks
Intended Usage	A medium for the differentiation of *Enterobacteriaceae*, especially for Salmonella species. For professional use only.
Technique	Depends on the different methods. For information see product information.

Typical formulation*	g/l
L-lysine hydrochloride	5.0
Yeast extract	3.0
Glucose	1.0
Bromocresol purple	0.015

*Adjusted as required to meet performance standards.

Quality Control

1. Control for general characteristics, labelling and printing.

2. Contamination check
   ≥ 72 h @ 20 – 25 °C, aerobic
   ≥ 72 h @ 30 – 35 °C, aerobic

3. Microbiological control

Positive Control	Growth
Inoculum ≥ 10^4 colony forming units (cfu), control medium TSA, caps not tightly closed Incubation conditions: 18 – 24 h @ 36 ± 1°C, aerobic	
Salmonella Typhimurium ATCC® 14028™	Violet medium, lysine decarboxylase (LDC) positive.

Negative Control	Growth
Inoculum ≥ 10^4 cfu, control medium TSA, caps not tightly closed Incubation conditions: 18 – 24 h @ 36 ± 1°C, aerobic	
Proteus vulgaris ATCC® 8427™	Yellow medium, lysine decarboxylase (LDC) negative.

ATCC® registered trademark of American Type Culture Collection.

Description

With lysine decarboxylase broth (Taylor), *Salmonella* spp. and some other Enterobacteriaceae can be differentiated by a biochemical reaction. The amino acid l-lysine is decarboxylated, whereby the amine cadaverine is formed with the release of CO_2. This alkaline reaction compensates the acidification of the medium caused by the glucose utilization and the medium remains violet. For Lysine-Decarboxylase-negative *Enterobacteriaceae* this counter reaction doesn't occur and the acidification of the medium changes the indicator dye to yellow.
In the modification according to Taylor, the originally contained peptone is absent because this led to the occurrence of false positive results[2]. Bacteria such as *Citrobacter freundii* utilised the peptone as a nitrogen source, produced alkalines and thereby masked the lack of lysine decarboxylase. In addition to this advantage, the medium also proved to be easier to evaluate and it was also no longer necessary to incubate anaerobically through covering with a paraffin layer.

Technique

Inoculate test tubes with a small inoculum of the bacteria to be investigated and incubate for 24 hours at 36 ± 1°C.

Typical Reactions of Selected *Enterobacteriaceae*

Genus/Species	Lysine Decarboxylation
Escherichia coli	±
Shigella species	-
Salmonella species[a]	+
Salmonella Typhi	+
Salmonella Paratyphi A	-
Citrobacter freundii	±
Klebsiella species	±
Enterobacter spp.	±
Proteus vulgaris	-
Proteus mirabilis	-
Serratia marcescens	±

[a)] most frequent serovars, + positive reaction, - negative reaction, ± variable reaction

Literature

1. DIN EN ISO 6579:2002. Mikrobiologie von Lebensmitteln und Futtermitteln – Horizontales Verfahren zum Nachweis von Salmonella spp.
2. Taylor, W.I. (1961) Appl. Microbiol. 9, 487-490.