TECHNICAL DATA SHEET

Article No. 7649

XLD Agar (Xylose Lysine Deoxycholate Agar) ISO

SYNONYMS

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SPECIFICATION

Medium for isolation of enteropathogenic species, especially *Shigella* and *Salmonella* in food and animal feeding stuffs, according to ISO standards.

FORMULA* IN G/L

Xylose	3.75
L-Lysine	5.00
Lactose	7.50
Sucrose	7.50
Sodium chloride	5.00
Yeast extract	3.00
Phenol red	0.08
Sodium deoxycholate	1.00
Sodium thiosulphate	6.80
Ammonium iron(III) citrate	0.80
Agar	15.00

Final pH 7.4 ±0.2 at 25 °C

*Adjusted and/or supplemented as required to meet performance criteria.

DIRECTIONS

Suspend 55.43 g of powder in 1 l of distilled water. Heat to boiling with constant stirring. Pour immediately into plates. Do not autoclave and avoid remelting.

DESCRIPTION

Xylose Lysine Deoxycholate Agar is a selective differential medium, suitable for the detection of pathogenic enterobacteria in food, especially *Shigella*. A modification in the original formulation of Taylor allows the medium to perform to the specifications of the ISO standards. Gram positive microbiota are inhibited by the low amount of deoxycholate, whilst *Shigella* grows. Xylose, lactose or sucrose fermentation produce acidification of the medium which is shown by the indicator surrounding the colonies turning yellow. This colour disappears after 24 hours, so readings must be carried out between 18 and 24 hours.
Sulphide production from thiosulphate is easily detected because colonies become darker, due to the ferric sulphide precipitate. Lysine decarboxylation to cadaverine may also be observed in the medium, since it produces alkalinization and consequently the indicator turns red.
All these reactions allow a good differentiation of *Shigell*a, which other than *Edwarsiella* and *Proteus inconstan*s are the only enterobacteria that do not ferment xylose and therefore show a negative fermentation reaction. *Salmonella* does ferment xylose, but it is consumed quickly and the medium becomes alkaline due to lysine decarboxylation, which may hide the reaction. The difference between *Shigella* and *Salmonella* is that the latter colonies become darker due to ferrous sulphide precipitates, which is also a common characteristic of *Edwarsiella*. Other types of enterobacteria do not suffer this phenomenon, since acid accumulation due to lactose and sucrose fermentation is so great that it avoids pH reversion by decarboxylation and even ferrous sulphide precipitate in the first 24 hours.
In the quality control appear the typical colonial aspects of Enterobacteriaceae after 24 ±3 h of incubation at 37 °C.

QUALITY CONTROL

- Incubation temperature: 37 ±1.0 °C
- Incubation time: 24 ±3 h
- Inoculum: Practical range 100 ±20 CFU. Min. 50 CFU (productivity)/10^4-10^6 CFU selectivity), according to ISO 11133:2014/Amd 1:2018.

Microorganism	Growth	Remarks
Enterococcus faecalis ATCC® 29212	Total inhibition	None
Escherichia coli ATCC® 25922	Partial inhibition	None
Salmonella abony NCTC® 6017	Productivity >0.50	Colonies & cult. medium red/Black center H_2S (+)
Salmonella typhimurium ATCC® 14028	Productivity >0.50	Colonies & cult. medium red/Black center H_2S (+)
Salmonella enteritidis ATCC® 13076	Productivity >0.50	Colonies & cult. medium red/Black center H_2S (+)
Shigella flexneri ATCC® 12022	Productivity >0.30	Colonies & cult. medium red/Black center H_2S (-)

REFERENCES

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· ISO 19250 Standard (2010) Microbiology of food and animal feeding stuffs.- Horizontal method for the detection of Shigella spp.
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· TAYLOR, W.J. (1965) Isolation of Shigella. I. Xylose Lysine Agars: New media for isolation of enteric pathogens. Am. J. Clin. Path 44:471-475.
· US FDA (Food and Drug Adminstrations) (1998) Bacteriological Analytical Manual 8th ed. AOAC Internacional. Gaithersburg. MD. USA.

STORAGE

Keep tightly closed, away from light, in a dry place (4-30 °C).

SHELF LIFE

4 years from date of production.

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