Condalab

Reference: 0930 **Technical Data Sheet**

Product: CE IVD **XLD AGAR EUROPEAN PHARMACOPOEIA, USP**

Specification

Solid medium for the isolation of enteropathogenic species, especially *Salmonella* and *Shigella* according to Pharmacopeial Harmonised Method and ISO Standard.

Presentation

	Packaging Details	Shelf Life	Storage
20 Prepared Plates 90 mm with: 21 ± 2 ml	1 box with 2 packs of 10 plates/pack. Single cellophane.	2,5 months	2-14°C

Composition

Composition (g/l):

Xylose	3.50
L-Lysine	5.00
Lactose	7.50
Sucrose	7.50
Sodium chloride	5.00
Yeast extract	3.00
Phenol red	0.08
Sodium deoxycholate	2.50
Sodium thiosulfate	6.80
Ammonium ferric citrate	0.80
Agar	15.0

Description /Technique

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 Xylose Lysine Deoxycholate Agar is a selective differential medium, suitable for the detection of pathogenic enterobacteria, especially Shigella. Gram positive microbiota are inhibited by the low amount of deoxycholate, whilst Shigella grows.
Xylose, lactose or sucrose fermentation produces the acidification of the medium, and this is seen by the indicator turning yellow, surrounding the colonies. This colour disappears after 24 hours, so observations must be carried out between 18 and 24 hours.
Hydrogen sulfide production from thiosulfate is easily detected because colonies become darker, due to the ferric sulfide precipitate.
Lysine decarboxylation to cadaverine may also be observed in the medium, since it produces alkalinization and consequently the indicator turns to red.
All these reactions allow a good differentiation of Shigella. Edwardsiella and Proteus inconstans are the only enterobacteria other than Shigella which do not ferment xylose and therefore show negative fermentation reaction. Salmonella ferment xylose, but it is consumed quickly and alkalinization of the medium due to lysine decarboxylation, may mask the reaction. Salmonella colonies become darker due to ferrous sulfide precipitates, which is also a common property with Edwardsiella.
Other types of enterobacteria do not suffer this phenomenon, since acid accumulation due to lactose and sucrose fermentation is so high that it avoids pH reversion by decarboxylation and even ferrous sulfide precipitate in the first 24 hours.

Technique

For plate inoculation follow the laboratories standard methods or the applicable norms (spiral plating method, econometric methods, streak plating, dilution banks, spread plating with drigralsky rod etc ...)
Incubate aerobically at 37±1C° for 24-48 h.

Quality control

Physical/Chemical control

Color : Red pH: 7.4 ± 0.2 at 25°C

Microbiological control

Growth Promotion Test according to harmonized pharmacopoeial monographs and test methods & ISO 11133:2014

Spiral Spreading: Practical range 100±20 CFU; Min. 50 CFU (Productivity) / 10^4-10^6 CFU (Selectivity).

Aerobiosis. Incubation at 37 ± 1°C, reading after 24/44 ± 4h

Microorganism	Growth
Enterococcus faecalis ATCC® 29212, WDCM 00087	Inhibited
Escherichia coli ATCC® 8739, WDCM 00012	Partially Inhibited (≤ 30%)
Salmonella typhimurium ATCC® 14028, WDCM 00031	Good - Cult. medium & red colonies, black center (SH_2 +).
Salmonella enterica ATCC® 13076, WDCM 00030	Good - Cult. medium & red colonies, black center (SH_2 +).
Shigella flexneri ATCC® 12022, WDCM 00126	Good - Cult. medium & red colonies (SH_2 -).

Sterility Control

Incubation 48 hours at 30-35°C and 48 hours at 20-25°C: NO GROWTH
Check at 7 days after incubation in same conditions

Bibliography

· ATLAS, R.M., L.C. PARK (1993) Handbook of Microbiological Mediafor the examination of Food. CRC Press Inc.Boca Ratón.

· DOWNES, F.P. & K. ITO (2001) Compendium of Methods for the Microbiological Examination of Foods. 4th ed. APHA. Washington DC. USA.

· EUROPEAN PHARMACOPOEIA 8.0 (2014) 8th ed. § 2.6.13. Microbiological examination of non-sterile products: Test for specified microorganisms. Harmonised Method. EDQM. Council of Europe. Strasbourg.

· HORWITZ, W. (2000). Official Methods of Analysis of the AOAC Internacional. 17th ed. Gaithersburg Md. USA.

· ICMSF (1978) Microorganisms in Foods 1. University of Toronto Press.

· ISO 6340:1995 STANDARD. Water Quality - Detection of *Salmonella spp*.

. ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.

· PASCUAL ANDERSON, Mª R. (1992) Microbiología Alimentaria. Díaz de Santos, S.A. Madrid.

· 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. Revision A. AOAC International. Gaithersburg, Md. USA.

· USP 33 - NF 28 (2011) <62> Microbiological examination of non-sterile products: Test for specified microorganisms. Harmonised Method. USP Corp. Inc. Rockville. MD. USA.