Reference: BPWR3004 **A.B.E. - Technical Data Sheet**

Product: **XLD Agar (ISO)**

Specification

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

Presentation

	Packaging Details	Shelf Life	Storage
20 Prepared Plates 90 mm with: 21 ± 1 ml	1 box with 2 packs of 10 plates/pack. Single cellophane.	3 months	2-14 ºC

Composition

Composition (g/l):

Xylose	3.750
L-Lysine HCl	5.000
Lactose	7.500
Sucrose	7.500
Sodium chloride	5.000
Yeast extract	3.000
Phenol red	0.080
Sodium Deoxycholate	1.000
Sodium thiosulfate	6.800
Ammonium ferric citrate	0.800
Agar	15.000

Description /Technique

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.
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 red.
All these reactions allow a good differentiation of *Shigella*, which other than *Edwarsiella* and *Proteus inconstans* 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 sulfide 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 sulfide 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

Physical/Chemical control

Color : Red pH: 7.4 ± 0.2 at 25ºC

Microbiological control

Spiral Spreading: Practical range 100 ± 20 CFU. min. 50 CFU (productivity) / 10^4-10^6 CFU (selectivity).

Microbiological control according to ISO 11133:2014/A1:2018.

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020.

Aerobiosis. Incubation at 37 ± 1 ºC, reading after 24 ± 3 h

Microorganism	Growth
Enterococcus faecalis ATCC® 29212, WDCM 00087	Inhibited
Salmonella typhimurium ATCC® 14028, WDCM 00031	Good (≥ 50 %) - Cult. medium & red colonies, black center
Salmonella enterica ATCC® 13076, WDCM 00030	Good (≥ 50 %) - Cult. medium & red colonies, black center
Escherichia coli ATCC® 25922, WDCM 00013	Partially Inhibited (≤ 30%). Yellow colonies

Sterility control

Incubation 48 h at 30-35 ºC and 48 h at 20-25 ºC: NO GROWTH.
Check at 7 days after incubation in same conditions.

Bibliography

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