

CHROMagar™ Salmonella Plus / XLD Agar

For in vitro diagnostic use

Cat. No. DD-071

90mm Prepared plates

Pkg.: 10 units in a bag

Expiry Date: Printed on label and on the item

Storage

Store at 2-8⁰ C. Protected from light.

Hy-Laboratories
Ltd.

Park Tamar
Rehovot 76326
Israel

Tel : 972-8-9366475

Fax : 972-8-
9366474

hylabs@hylabs.co.il

www.hylabs.co.il

Composition (g/L)

Classical formula adjusted and/or supplemented as required to meet performance criteria.

CHROMagar S.P

Agar:15.0g/ Peptone and Yeast Extract:7.0g

Chromogenic and Selective mix: 12.9g

XLD

Yeast Extract, L-Lysine, Xylose, Lactose, Saccharose, NaCl, Phenol Red,
Agar

Intended Use

This medium is a selective and differential medium developed by CHROMagar in Paris, allowing by the detection of all *Salmonella*, including Lactose positive *Salmonella*, *S. typhi* and *S.paratyphi*.

Traditionally, *Salmonella* are considered to be non-lactose fermenting organisms – however a small but important number of this highly diverse group are capable of lactose fermentation and may be correctly identified or missed altogether by conventional *Salmonella* selective media. Indeed, inclassical agars like XLD, MacConkey or Hektoen, the *Salmonella* Lactose positive will have almost the same appearance as the most common coliforms, with a high risk of being missed altogether.

Salmonella strains grow on this medium in typical pink mauve colonies. Other microorganisms are inhibited or grow colorless or in turquoise colonies. See Table of results on page 3.

The medium applies to clinical specimens and food.



Xylose Lysine Desoxycholate Agar (XLD) side:

This medium is recommended for isolation and differentiation of enteric pathogens, especially for *Shigella* species.

The medium is formulated to increase the frequency of growth of the most fastidious pathogens that in other formulations often failed to grow due to the inclusion of excessively toxic inhibitors. XLD is included in the USP microbial limit test for screening specimens for the presence or absence of *Salmonella*.

XLD has sodium desoxycholate as the selective agent and therefore it is inhibitory to gram-positive microorganisms. The lysine included in the medium enables the *Salmonella* group to be differentiated from the non-pathogens since without lysine, *Salmonellae* would rapidly ferment the xylose present in the medium and be indistinguishable from non-pathogenic species. After the *Salmonellae* exhaust the supply of xylose, the lysine is attached via the enzyme lysine decarboxylase that has a reversion to an alkaline pH that mimics the *Shigella* reaction. To prevent similar reversion by lysine-positive coliforms, lactose and sucrose were added to produce acid in excess.

To aid the differentiating ability of the formulation, an H₂S indicator system, consisting of sodium thiosulfate and ferric ammonium citrate, is included for the visualization of the hydrogen sulfide produced, resulting in the formation of black centered colonies. The non-pathogenic H₂S producers DO NOT decarboxylate lysine, therefore the acid reaction produced by them prevents the blackening of the colonies.

See Table of results on page 3.

Procedure

1. Use standard collection procedures for clinical specimens.
2. If the plates have been refrigerated, allow to return to room temperature before inoculation. Streak sample onto plate and incubate plates aerobically at 37⁰ C for 24hours (inverted).
3. For Environmental Control Programms, use conventional swabbing techniques for sampling and incubate as indicated above.

Interpretation of Results

See table annexed.

Procedure Limitations

Minimize exposure of CHROMagar Salmonella Plus/XLD to light before and during incubation in order to avoid destroying the chromogens. Store plates in the original package.

Disposal

Used contaminated test material should be handled by standard decontamination methods such as autoclaving or incineration.

TABLE OF INTERPRETATION OF RESULTS

Microorganism	CHROMagar Salmonella plus side		XLD AGAR side		
	Colony growth	Colony color	Colony growth	Lactose	H ₂ S
<i>Salmonella typhimurium</i>	excellent	pink, mauve	pink-red colonies, black center	-	+
<i>Salmonella typhi</i>	excellent	pale pink	pink-yellow colonies; some strains have black center	-	+
<i>Salmonella arizona</i>	excellent	pale pink	yellow colonies, black center	+	+
<i>Klebsiella pneumoniae</i>	excellent	turquoise	yellow colonies	+	-
<i>E. coli</i>	good to excellent	white-grey	partially inhibited; large, flat, yellow	+	-
<i>Shigella sonnei</i>	good to excellent	colorless	good to excellent pink-red colonies	-	-
<i>Shigella flexneri</i>	good to excellent	colorless	good to excellent pink-red colonies	-	-
<i>Staph. aureus</i>	inhibited	/	inhibited	/	/
<i>Proteus mirabilis</i>	inhibited	/	pink-red to orange; most strains have black center	/	+

Also growing on CHROMagar Salmonella Plus side after 24 hours 37°C, aerobically

Microorganisms	Colony morphology
<i>P. aeruginosa</i>	Small greenish
<i>Burkholderia cepacia</i>	If grows, small violet colonies
<i>Proteus vulgaris, P. mirabilis</i>	If grows, very small yellowish colonies
<i>Providencia stuartii</i>	White-grey, non-transparent, irregular edges
<i>Morganella morgani</i>	Inhibited
<i>Aeromonas hydrophila</i>	Pink with pink shadow
<i>Enterobacter spp.</i>	Small to medium size, turquoise
<i>Serratia marcescens</i>	Blue
<i>Yersinia enterocolitica</i>	Very small colorless