TM 372 – ENDO AGAR

INTENDED USE

For confirmation of members of coliform group from clinical and non-clinical specimens.

PRODUCT SUMMARY AND EXPLANATION

Endo Agar was developed by Endo to differentiate gram-negative bacteria on the basis of lactose fermentation, while inhibiting gram-positive bacteria. Inhibition of the later was achieved without the use of bile salts as was traditionally used. Endo was successful in inhibiting gram-positive bacteria on his medium by the incorporation of sodium sulphite and basic fuchsin. The resulting Endo Agar, also known as Fuchsin Sulphite and Infusion Agar, was used to isolate the typhoid bacilli. Many modifications of this media have been done over the years.

Endo Agar is recommended by APHA as an important medium in the microbiological examination of water and wastewater, dairy products and foods. Endo Agar is used to confirm the detection and enumeration of coliform bacteria following presumptive test of drinking water. It is also used for the detection and isolation of coliforms and faecal coliforms from milk, dairy products and food.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	10.000
Lactose	10.000
Dipotassium hydrogen phosphate	3.500
Sodium sulphite	2.500
Basic fuchsin	0.500
Agar	15.000

PRINCIPLE

The medium consists of peptone which provide nitrogen, carbon, vitamins and minerals required for bacterial growth. Sodium sulphite and basic fuchsin make this medium selective by suppressing gram-positive organisms. Coliforms produce pink colonies on fermentation of lactose while lactose non-fermenters produce colourless colonies on the medium. With *Escherichia coli*, this reaction is very pronounced as the fuchsin crystallizes, exhibiting a permanent greenish metallic luster (fuchsin luster) to the colonies. Medium should be stored away from light to avoid photo-oxidation.

INSTRUCTION FOR USE

- Dissolve 41.5 grams in 1000 ml purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.
- Mix well and pour into sterile Petri plates.
- If the solidified culture medium is somewhat too red, then to remove the colour add a few drops (max. 1 ml/litre) of a freshly prepared 10% Sodium sulphite solution and boil.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light pink to purple homogeneous free flowing powder.
Appearance of prepared medium : Orangish pink coloured, clear to slightly opalescent gel with fine precipitate forms in Petri plates.
pH (at 25°C) : 7.5 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
Bacillus subtilis subsp. spizizenni	6633	>=10^4	Inhibited	0%	-	35-37°C	18-24 Hours
Klebsiella aerogenes	13048	50-100	Good-luxuriant	>=50%	Pink	35-37°C	18-24 Hours
Enterococcus faecalis	29212	50-100	None-poor	>=50%	Pink, small	35-37°C	18-24 Hours
Escherichia coli	25922	50-100	Good-luxuriant	>=50%	Pink to rose red with metallic sheen	35-37°C	18-24 Hours
Klebsiella pneumoniae	13883	50-100	Good-luxuriant	>=50%	Pink, mucoid	35-37°C	18-24 Hours
Proteus vulgaris	13315	50-100	Good-luxuriant	>=50%	Colourless to pale pink	35-37°C	18-24 Hours
Pseudomonas aeruginosa	27853	50-100	Good-luxuriant	>=50%	Colourless, irregular	35-37°C	18-24 Hours
Salmonella Typhi	6539	50-100	Good-luxuriant	>=50%	Colourless to pale pink	35-37°C	18-24 Hours
Staphylococcus aureus subsp.aureus	25923	>=10^4	Inhibited	0%	-	35-37°C	18-24 Hours
Enterobacter cloacae	13047	50-100	Good	40-50%	Pink	35-37°C	18-24 Hours

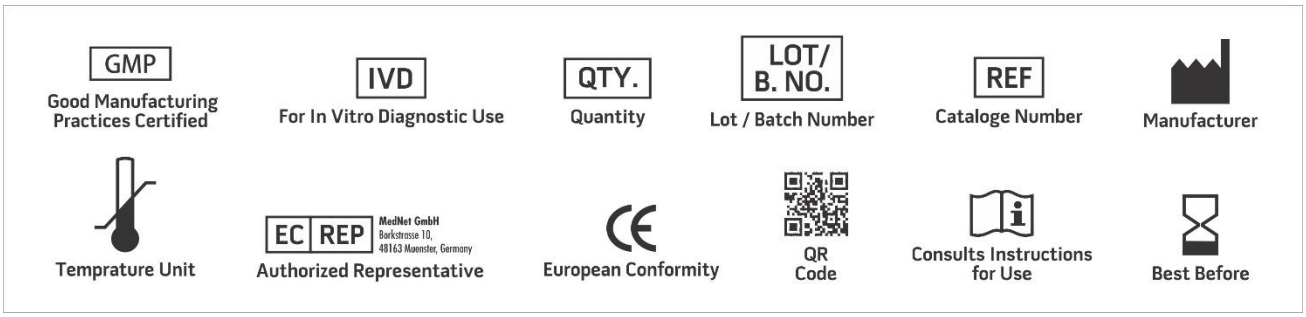
Salmonella Typhimurium	14028	50-100	Good-luxuriant	>=50%	Colourless	35-37°C	18-24 Hours
Salmonella Enteritidis	13076	50-100	Good-luxuriant	>=50%	Colourless	35-37°C	18-24 Hours
Shigella flexneri	12022	50-100	Good-luxuriant	>=50%	Colourless	35-37°C	18-24 Hours

PACKAGING:
In pack size of 100 gm and 500 gm bottles.

STORAGE
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL
After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES
1. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
2. Endo S., 1904, Zentralbl. Bakteriol., Abt. 1, Orig.35:109-11..
3. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
4. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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