

Tryptophan Broth

Intended Use

Tryptophan Broth is recommended for detection of indole production.

Summary

Tryptophan Broth is recommended by APHA for detection of indole production by coliforms, which is a key feature in differentiation of bacteria. This test demonstrates the ability of certain bacteria to decompose the amino acid tryptophan to indole which accumulates in the medium. Indole testing is recommended as an aid in the differentiation of microorganisms based on indole production. For complete identification of the organisms, further biochemical confirmation is necessary. Certain microorganism's breakdown tryptophan with the help of the enzyme tryptophanase that mediate the production of indole by hydrolytic activity. The indole produced can be detected by Kovac's or Ehrlich's reagent. Indole combines with the aldehyde present in the above reagent to give red colour in the alcohol layer. The alcohol layer extracts and concentrates the red colour complex.

Principle

It contains meat peptone which provides necessary nitrogen sources, carbon, vitamins, growth factors and also trace ingredients to non-fastidious organisms. Sodium chloride maintains osmotic equilibrium of the medium. DL-Tryptophan is an amino acid, which serves as a substrate to study indole reaction.

Formula*

Ingredients	g/L
Meat peptone	10.0
Sodium chloride	5.0
DL-Tryptophan	1.0
Final pH (at 25°C)	7.2 ± 0.2

*Adjusted to suit performance parameters.

Storage and Stability

Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Specimen Collection and Handling

Ensure that all samples are properly labelled.

Follow appropriate techniques for handling samples as per established guidelines.

Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure.

The samples must be stored and tested within the permissible time duration.

After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions

1. Suspend 16.00 g of the powder in 1000 mL purified / distilled water.
2. Heat if necessary, to dissolve the powder completely.
3. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.
4. Mix well and dispense as desired.

Quality Control

Dehydrated Appearance: Cream to yellow coloured, homogenous, free flowing powder.

Prepared Appearance: Light yellow coloured, clear solution without any precipitate.

Cultural Response: Cultural characteristics observed after an incubation of 18-48 hours at 35°C-37°C.

Organism (ATCC)	Growth	Indole Test
<i>Escherichia coli</i> (25922)	Good	Positive reaction, red ring at the interface of the medium
<i>Klebsiella aerogenes</i> (13048)	Good	Negative reaction, no colour development / cloudy ring
<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i> (10031)	Good	Negative reaction, no colour development/ cloudy ring

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

References

1. Greenberg A. E., Clesceri L. S. and Eaton A. D., (Eds.), 1998, Standard Methods for the Examination of Water and Wastewater, 20th Ed., APHA, Washington, D.C.
2. Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and McCartney, Practical Medical Microbiology, 1996, 14th Edition, Churchill Livingstone.
3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.
4. Finegold S. M. and Baron E. J., 1986, Bailey and Scotts Diagnostic Microbiology, 7th Ed., The C.V. Mosby Co., St. Louis.
5. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201200350100	Dehydrated Culture Media	100 g
201200350500	Dehydrated Culture Media	500 g

Disclaimer

Information provided is based on our inhouse technical data on file, it is recommended that user should validate at his end for suitable use of the product.