# Egg Yolk Agar Base

## Intended Use
Egg yolk agar base is a medium used for isolation and identification of Clostridia and other anaerobic microorganisms.

## Summary
Food poisoning by *Clostridium perfringens* is one of the most common types of human food borne illness. The foods usually involved are cooked meat or poultry products containing large numbers of viable cells. A heat-labile enterotoxin produced only by sporulating cells induces the major symptoms of diarrhoea in perfringens poisoning. Egg Yolk Agar Base is a slight modification of McClung Toabe Agar Base used for isolation and detection of *Clostridium perfringens*. Egg Yolk Agar Base differs from the original formula by the inclusion of hemin.

## Principle
Proteose peptone provide the essential nutrients along with carbonaceous and nitrogenous substances. Phosphates buffer the medium whereas sodium chloride maintains the osmotic equilibrium. Magnesium sulphate serves as a source of divalent cations along with sulphates. Glucose serves as a source of energy. Hemin help to enhance the growth of anaerobic organisms. Organisms producing lecithinase break down lecithin present in the egg yolk emulsion producing an insoluble opaque precipitate around the colonies. Lipase-producing organisms break down free fatty acids (in the egg yolk emulsion) forming an iridescent sheen on the surface of the colonies. Lipase activity may be delayed, therefore plates should not be discarded as negative before incubation for a week. Proteolytic activity is seen as clear zones around the colonies. The media should be directly inoculated with the test specimen. Prior to inoculation, media plates should be reduced by placing in an anaerobic jar for 18-24 hours. An enrichment broth should be simultaneously inoculated with the test sample to detect small number of anaerobic organisms. Standard procedures for the isolation of organism should be referred. Incubation should be carried out for 18-48 hours and continued for 7 days.

## Formula*
| **Ingredients** | **g/L** |
|---|---|
| Proteose Peptone | 40.0 |
| Disodium Phosphate | 5.0 |
| Monopotassium Phosphate | 1.0 |
| Sodium Chloride | 2.0 |
| Magnesium Sulphate | 0.1 |
| Glucose | 2.0 |
| Hemin | 0.005 |
| Agar | 25.0 |
| Final pH (at 25°C) | 7.6 ± 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.

## 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 75.10 g of the powder in 900 mL purified / distilled water.
2. Heat to boiling to dissolve the powder completely.
3. Dispense in 90 mL amounts and sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.
4. Cool to 45°C-50°C and add 10mL of sterile Egg Yolk Emulsion (204050370100) per 90 mL of medium.

## Quality Control

**Dehydrated Appearance:** Cream to yellow coloured, homogenous, free flowing powder.
**Prepared Appearance**: Basal medium: Medium amber coloured slightly opalescent gel.
With addition of egg yolk emulsion: Yellow coloured opaque gel forms in petridishes.
**Cultural Response:** Cultural characteristics observed with added Egg yolk emulsion after an incubation at 35°C -37°C for 48-72 hours when incubated anaerobically. (Plate should be incubated up to 7 days before regarding them as negative)

| Organisms (ATCC) | Growth | Lecithinase Production | Lipase Activity | Proteolytic activity |
|---|---|---|---|---|
| *Bacteroides fragilis* (25285) | Good | - | - | - |
| *Clostridium botulinum* (25763) | Good | - | - | + |
| *Clostridium butyricum* (13732) | Good | - | - | + |
| *Clostridium perfringens* (12924) | Good | + | - | - |
| *Clostridium sporogenes* (11437) | Partial Inhibition | - | + | + |

**For Lecithinase Production:**
**-** : No clear Zone
**+** : opaque zone around the colony

**For Lipase activity:**
**-** : Negative reaction, no iridescent sheen on the colony surface and medium
**+** : Positive reaction, iridescent sheen on the colony surface and medium

**For Proteolytic activity:**
**-** : Negative, no clear zone surrounding colonies
**+** : Positive, clear zone surrounding colonies

## Performance and Evaluation

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

1. Directions
2. Storage
3. Expiry

## Warranty

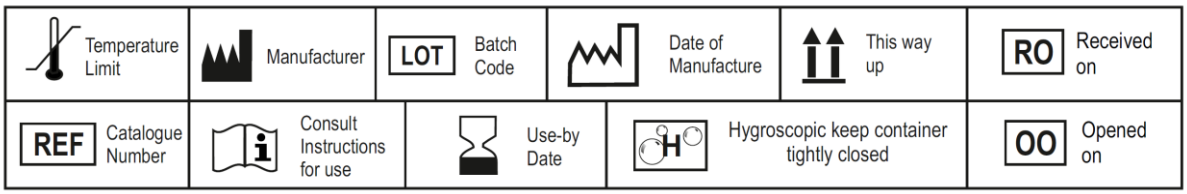
This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

## Reference


1. Atlas R. M., 2004, Handbook of Microbiological Media, 3r Ed., CRC Press.
2. Duncan C. L., 1973, A. J. Bacteriol., 113:932
3. Labbe R., 1989, Clostridium perfringens, In Foodborne Bacterial Pathogens Ed., Doyle M. P., P.191, Marcel Dekker, New York , N.Y.,
4. McClung and Toabe, 1947, J. Bacteriol., 53:139
5. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C
6. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

**Product Presentation:**

| Cat No. | Product description | Pack Size |
|---|---|---|
| 201050650500 | Dehydrated Culture Media | 500 g |

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**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.