

# **Technical Data**

## Friis Liquid Medium Base

M1928

Recommended for the detection of non-avian Mycoplasmas in pharmaceutical products in accordance with European pharmacopoeia

### Composition\*\*

Ingredients	<b>Gms / Litre</b>
Proteose petone	0.820
Peptone	1.510
Yeast extract	6.200
Sodium chloride	5.050
Magnesium sulphate, heptahydrate	0.049
Potassium chloride	0.195
Calcium chloride, anhydrous	0.068
Magnesium chloride, hexahydrate	0.049
Disodium hydrogen phosphate, dihydrate	0.036
Disodium hydrogen phosphate	1.510
Dipotassium hydrogen phosphate,anhydrous	0.029
Calf brain infusion from	16.420
Beef heart infusion from	28.060
Glucose monohydrate	0.164
Phenol red	0.137
Final pH 7.40 -7.45	

Suspend 18.01 grams (the equivalent weight of dehydrated medium per litre) in 800 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15bs pressure (121°C) for 15 minutes. Cool to 45-50°C. Aseptically add 100 ml of Horse serum (RM1239), 100 ml of Pig(Swine) (RM10415) serum and rehydrated contents of Two vials of Friis supplement (FD317). Mix well and dispense as desired.

#### **Principle And Interpretation**

Mycoplasmas (mollicutes) are the smallest free-living microorganisms (1). Earlier Mycoplasmataceae were given the general title of pleuropneumonia like organism (PPLO), because of similarities to Mycoplasma mycoides (subsp. mycoides), the causative agent of bovine pleuropneumonia (2). Although some species are normal human respiratory tract flora, Mycoplasma pneumonia is an important cause of pneumoniae and a major cause of respiratory disease. Mycoplasma hominis, Mycoplasma genitalium and Ureaplasma urealyticum are important colonizers (and possible pathogens) of the human genital tract.

This medium is recommended by European pharmacopoeia (3) for the detection of non-avian mycoplasma. The optimum growth conditions are 35-38°C under microaerophilic conditions.

For the cultivation of Mycoplasma the medium ingredients and all the supplements should be free of any toxic substances even in small amounts. Proteose peptone, peptone, yeast extract, calf brain infusion from and beef heart infusion from powder provide nitrogen, vitamins, amino acids and carbon sources. Sodium chloride maintains the osmotic balance. Many Mycoplasma require serum which is supplemented by horse serum and swine serum in the medium for their good growth. The presence of antibiotic is necessary to prevent the growth of contaminating organisms. Mostly the *Mycoplasma* species are aerobic or facultatively anaerobic but some are microaerophilic. Sodium chloride maintains the osmotic balance. Phosphates buffer the medium. Other inorganic salts supply the necessary ions.

#### **Quality Control**

#### **Appearance**

Light yellow to pink homogeneous free flowing powder

<sup>\*\*</sup>Formula adjusted, standardized to suit performance parameters

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#### Colour and Clarity of prepared medium

Red coloured clear solution in tubes

#### Reaction

Reaction of 1.80% w/v aqueous solution at 25°C. pH: 7.40 - 7.45

#### **Cultural Response**

Cultural response observed with added Horse Serum (RM1239), Pig(Swine) serum (RM10415) and Friis supplement (FD317) after an incubation at 35-38°C for 48 hours to one week under microaerophilic condition.

#### **Cultural Response**

Organism	Growth	
<b>Cultural Response</b>		
Acholeplasma laidlawii	good-luxuriant	
ATCC 23206		
Mycoplasma gallisepticum	good-luxuriant	
NCTC 10115		
Mycoplasma hyorhinis	good-luxuriant	
NCTC 10130		
Mycoplasma orale ATCC	good-luxuriant	
23714		
Mycoplasma pneumoniae	good-luxuriant	
ATCC 15531		

#### **Storage and Shelf Life**

Store dehydrated powder at 10-30°C in tightly closed container and prepared medium at 2-8°C. Use before expiry date on the label.

#### Reference

1.Murray P.R., Baron E. J., Pfaller M.A., Tenover F.C., Yolken R.H.(Eds.), 1995, Manual of Clinical Microbiology, 6th Ed., ASM Press.

2. Collee J.G, Fraser A.G., Marmion B.P., Simmons. A (Eds.), 1996, Mackie and McCartney Practical Medical Microbiology, 14th Ed, Churchill Livingstone.

3. European Pharmacopoeia, 2014, European Dept. for the quality of Medicines.

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