

CM 20868 - KIRCHNER MEDIUM BASE, MODIFIED

INTENDED USE

For cultivation of Mycobacterium tuberculosis.

PRODUCT SUMMARY AND EXPLANATION

Mycobacterium tuberculosis is an acid-fast gram-positive aerobic bacteria involved in most cases of tuberculosis. Humans are the only reservoir for the bacterium. Many non-pathogenic Mycobacteria are components of the normal flora of humans, found most often in dry and oily locales. Kirchner Medium was first developed by Kirchner based on the formulation of Longs Medium and further modified with addition of glycerol and enrichments for the cultivation of M. tuberculosis. It is widely used for antibacterial test, for antituberculosis agents and sometimes in differential culture of M. tuberculosis from unhealthy materials. Kirchner Agar Medium is made by addition of agar (2%) to this medium. Kirchner Semisolid Agar Medium is obtainable by addition of agar upto 0.1%. In case of screening test for antituberculosis agents on solid media, it takes at least 3-4 weeks to achieve culture of tubercle bacilli. Broth medium can give results in a week or two; hence broth medium is widely used in cases where rapid results are needed.

COMPOSITION

Ingredients	Gms / Ltr
Disodium hydrogen phosphate	3.000
Potassium dihydrogen phosphate	4.000
Magnesium sulphate	0.600
Sodium citrate	2.500
L-Asparagine	5.000
Disodium hydrogen phosphate	3.000

PRINCIPLE

Kirchner medium contains two phosphates, a sulphate and citrate, which buffer the medium. Hence the medium can be directly inoculated without any prior neutralization. L-asparagine in the medium supports the growth of M. tuberculosis, as it is a good nutrient for the organism. Horse serum also promotes the growth of the organism. Penicillin inhibits the growth of contaminating bacteria. At first stage after inoculation of M. tuberculosis, granular colonies are observed at the bottom of the tube and as the incubation proceeds, bacterial film will be formed on the surface, rendering the medium transparent.

INSTRUCTION FOR USE

Dissolve 15.1 grams in 700 ml purified/distilled water, add 200 ml glycerol.
Heat to boiling to dissolve the medium completely.
Dispense in 9 ml aliquots.
Sterilize by autoclaving at 115°C for 15 minutes.
Cool to 45-50°C. Just before use, aseptically add 1 ml of Horse serum and 100 IU Penicillin per 9 ml medium.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : White to cream homogeneous free flowing powder.
Appearance of prepared medium : Colourless solution having slight white precipitate at the bottom.
pH (at 25°C) : 7.4±0.2

INTERPRETATION



Cultural characteristics observed with added Horse Serum and 100IU Penicillin, after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Incubation Temperature	Incubation Period
Mycobacterium tuberculosis	25618	50-100	Good-luxuriant	35 - 37°C	2-4 weeks
Mycobacterium smegmatis	14468	50-100	Good-luxuriant	35 - 37°C	2-4 weeks
Mycobacterium fortuitum	6841	50-100	Good-luxuriant	35 - 37°C	2-4 weeks

PACKAGING:

Inpacksizeof500 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.

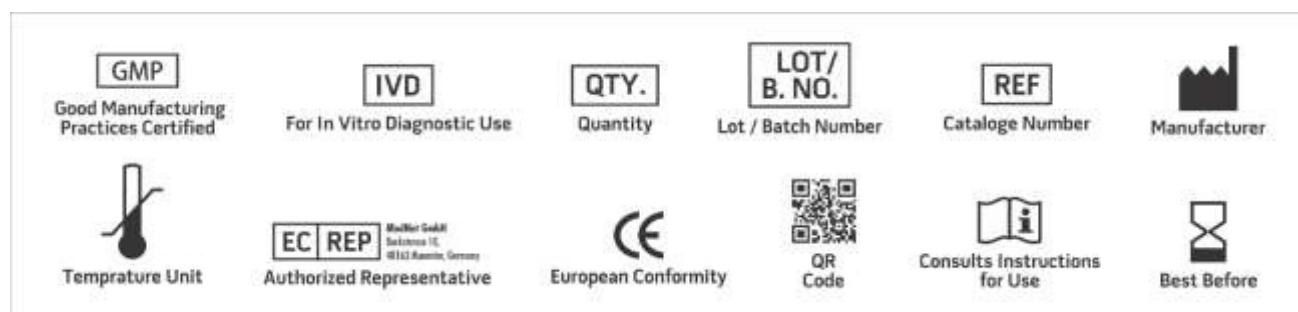
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

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

REFERENCES

1. BakerF.J. and Breach M.R., 1980, Medical Microbiological Techniques, Butterworths and Co. Ltd.
2. Isenberg, (Ed.), Clinical Microbiology Procedures Handbook 2nd Edition
3. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.



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

*ForLabUseOnly



