DDK Italia

IVD dispositivo medico-diagnostico in vitro

CE

M.I.F. (Mercuruthiolate, iodine, formalin) technical information
Technical card code 12-104
Product code 12-104
Pack 1kit. Number of tests 100 or on request
Stability of product properly conserved at 15-20°C 24 months

Produce in Italy by
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Principle

In parasite coprology, MIF (Mercuruthiolate, Iodine, Formalin) is used as a method of simultaneously staining and preserving the vegetative forms and cysts of protozoa. Demonstration of parasites by the concentration method of Blagg, Schloegel, Mansoer and Khalaf is also possible.

Procedure

In a haemolysis tube 1,5 ml, mix 3 volumes (3 drops) of Lugol PVP stabilized and 47 volumes (47 drops) of formaldehyde-merthiolate. Add a small amount of fecal material. Blend to obtain a homogenous solution. Allow to settle. Screen through a metal screen to eliminate bulky debris.
Collect 10 ml filtrate in a centrifuge tube. Add 4 ml ether and shake vigorously.
Stand for 2 minutes. Either of the following may occur.

a) The emulsion remains stable.

The ether phase does not rise. Centrifuge at 1500 to 2000 rpm for 2 minutes. Free the lipophilic residue layer. Discard the supernatant by upending the tube. Swab the tube walls with cotton wool before righting.
Suspend the sediment in a few drops of isotonic saline. Withdraw the sediment by capillarity using a Pasteur pipette. Examine all the sediment under the microscope.

b) The emulsion breaks and the ether phase rises.

Add 1 ml tap water. Shake vigorously. Stand to check emulsion stability. If it breaks, add water.
Centrifuge. Examine the sediment under the microscope.
Routine method enabling concentration and staining of protozoa cysts. Unfertilized cysts and ascaris eggs are concentrated.

Results

Cysts, eggs, parasites:	green yellow brown.
Cytoplasm and nuclear membrane:	dark red.
Nuclei chromatin:	colorless.

Cysts, eggs, parasites, are colored, yellow or light brown, dark green. After two hours, the initial color of the iodine solution is replaced from eosin. The nuclear membrane becomes dark red to black. The cytoplasm is red, and the chromatin is not stained and appears in refraction.

The Dientamoeba fragilis is not colored by this method

Reagent

Lugol PVP stabilized	30 ml
Merthiolate formaldehyde	150 ml

References

Bailenger J., Coprologie parasitaire et fonctionelle, Drouillard, Bordeaux 3ème éd. (1973). Barret F. Application de la technique du M.I.F. en coprologie parasitaire, Microbia (1975) 2. Golvan Y.J., Drouhet E., Techniques en parasitologie et mycologie, Flammarion, Paris (1972).

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* Technical's note: staining time vary according to age, types of solutions, thickness of sections, et. When Gill (code 09-178) modified solution is used, get the best result, staining time (maximum 1-5 minutes), for best change in color, wash quickly in tap water, and then in Scott acidulated solution, (code 00-136). For sections fixed in Bouin, we recommend the use of haematoxylin modified acid AB (code 09-183).

** Please note the alcoholic loses eosin stain with the use, of the days are stretched over time colouring. If you are using purified eosin, check the time, and possibly diluted in ethyl alcohol 96°C, if the cytoplasmic staining was too strong.

* Before use, filter the following solutions; alcoholic eosin, eosin phloxine; Harris haematoxylin, Gill's haematoxylin. The acidified aqueous solution of eosin is prepared by slowly adding glacial acetic acid.

* Follow normal precautions for laboratory reagents. Dispose of waste according to regulations at the local, regional or national level. Refer to Data Sheet Material Safety Data for updated information on risks, hazards and safety associated with the use of these products.

* Risk and Safety Statements outside the EU.
The eosin solution in alcohol is flammable and harmful. Harmful by inhalation, in contact with skin or if swallowed. Harmful: possible risk of irreversible effects through inhalation, in contact with the skin or by ingestion. Irritating to eyes, respiratory system and skin. Keep away from sources of ignition - No smoking. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical attention immediately (show the label where possible).

* Target organs: eyes and nerves.
Eosin in aqueous solution. Caution: substance not yet fully tested. Avoid contact and inhalation of the solution of Harris haematoxylin. Organs: heart and nerves. Solutions based hemallum are harmful. Harmful if swallowed. Irritating to eyes, respiratory system and skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical attention. Wear suitable protective clothing. Organs affected: liver and kidneys.
In case of accident or if you feel unwell, seek medical attention immediately (show the label where possible).

* Risk and Safety Statements (U.E.)
The eosin solution in alcohol is highly flammable and harmful. Highly flammable. Harmful by inhalation, in contact with skin or if swallowed. Harmful: possible risk of irreversible effects through inhalation, in contact with the skin or by ingestion. Keep away from sources of ignition - No smoking. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical attention immediately (show the label where possible).
Eosin in aqueous solution. Caution: Substance not yet fully tested. Solution of hemallum. Do not breathe vapors. Avoid contact with skin and eyes. Gill haematoxylin Solutions are harmful. Harmful if swallowed. Irritating to eyes, respiratory system and skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical attention. Wear suitable protective clothing.

* The microscope used should meet the requirements of a medical diagnostic laboratory. Carefully follow the instructions for the fixative. If an automated tool was used for staining, follow the instructions of the equipment and software. Remove surplus immersion oil before storing.

* Sample preparation
All samples must be treated according to the technology. All samples must be marked so as to be easily identified. Tools should be used for sampling and sample preparation, which must be observed strictly to manufacturer's instructions about the application and instructions.

* Diagnostics
The diagnosis should be performed only by authorized and trained persons. Valid nomenclatures must be used. Further tests must be selected and implemented according to recognized methods.

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* Conservation. The staining solution should be stored at a temperature between +15°C to 20°C, the dye at +5°C to 30° C. Store at 4-6 °C all kit containing silver solutions and Schiff reagents. The solution and dyes must be used before the expiration date. Stability. After first opening the bottle, the dye solution and the dyes are stable until the expiration date when stored at the temperature requested. Always keep the bottles tightly closed.

* Instructions for use
To avoid errors, the staining process must be performed by qualified personnel. For professional use only. Must observe the National guidelines for work safety and quality assurance. Microscopes are used according to the standard. Protection against infection. Must be taken with laboratory guidelines for the protection against infection.

* Instructions for disposal
The solutions used and those have expired must be disposed of as special waste according to local regulations regarding disposal of waste.

Endnotes
1 The timing suggested in the leaflet are approximate and may vary according to your specific needs. If they are used intensively, for staining solutions may lose their dyes, so it is necessary to extend the time of staining solutions, or replace with new products.
2. Include positive control slides in each session.
3. Some hydraulic systems deliver acidic water, unsuitable for use for the part of the procedure for the blue coloration. If tap water is acidic, instead using a dilute alkaline solution, for example, water buffered by Scott.
4. The presence of purple or red-brown nuclei a blue color indicates unsatisfactory.
5. If you over-eosin staining, nuclear staining may be masked. If done correctly, with eosin staining shows a three-tone effect. To increase the differentiation of eosin, extend the time of immersion in alcohol, or use a first alcohol with a higher water content. You can adjust the times of immersion in alcohol to obtain an adequate eosin staining.
6. We do not recommend the addition of stock solution in the working solutions of haematoxylin and eosin.
7. Avoid excessive drag (carryover) of water solutions in alcoholic eosin.
8. The data generated by this procedure are to be used only to support the diagnosis and should be evaluated in conjunction with other tests and diagnostic data