DDK Italia

IVD dispositivo medico-diagnostico in vitro

CE

Lugol (Gram's iodine) technical information
Technical card code 09-249
Product code 09-249
Stability of product properly conserved at 15-25°C in a dark place 24 month.
Pack 500-1000 ml or on request

Produce in Italy by:
DDKItalia S.r.l.
Via Marche 19-27029 Vigevano (I)
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in case of emergency UE number	☎	112
in case of emergency UK number	☎	999
en cas d'urgence Suisse number	☎	145

Application Histology

Solution for mercury chelating. Is used for the treatment of post-fixation after the use of topcoats based on salts of mercury.

Method

Lugol's solution for	5 minutes.
Washing	
Sodium thiosulphate solution for	5 minutes.

For Microbiology

Fresh sample of solution used directly for the highlight of intestinal protozoa, helminthes eggs or larvae present in the stool or other materials.
The nuclei of protozoa and cytoplasmic organelles are brown and thus more easily identifiable.

Mode of action

Aniline dyes in the cell tissue of micro-organisms from a red dye-iodine complex when exposed to iodine.
In gram-positive micro-organisms the dye-iodine complex cannot sub-sequently be dissolved from the cells with decolourizing agents such as alcohol or acetone. The cell remains blue-violet.
In gram-negative micro-organisms the dye-iodine complex is dissolved and the cell turns pink to red as a result of counterstaining.

Preparing the smears

Using an ignited loop, transfer a quantity of specimen, which may be a body fluid, exudates, pus, or a liquid or solid culture, on to a degreas-ed slide. Then distribute the specimen either directly or after adding 1–2 drops of physiological saline solution. After drying in air, heat-fix the smear by slowly drawing three times through the upper portion of a Bunsen flame. Leave to cool and stain.

Staining on a staining bench

1. Completely cover the slide with crystal violet solution. Stain for 1 min, pour off.
2. Carefully rinse with Lugol solution.
3. Completely cover the slide with Lugol solution. Allow to act for 1 minute.
4. Carefully rinse with distilled water for about 5 second.
5. Swirl the slide for about 10–15 second in decolourizing solution.
Stop swirling when no more dye is released and the smear appears greyish-blue.
6. Carefully rinse with distilled water for about 5 second.
7. Completely cover the slide with safranine solution. Stain for 1 minute.
8. Carefully rinse with distilled water for about 5 second.
9. Leave to dry, examine under a microscopy.

Results

Gram-positive micro-organisms	blue-violet
Gram-negative micro-organisms	pink to red

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* Notes. Distilled water or tap water can be used for rinsing and moisturizing. Always check the pH of your tap water and chlorine levels before proceeding with any type of biological tissue and stain.

* 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 vapours.
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.

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* 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.

* 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