

# POTASSIUM PERMANGANATE, 0.5% SOLUTION

IVD *In vitro* diagnostic medical device



## For use in special kits INSTRUCTIONS FOR USE

REF Catalogue number: KP05-OT-100 (100 mL)

### Introduction

Potassium permanganate, 0.5% solution is often used as a component of many special stains kits, such as Masson Fontana, Paraldehyde Fuchsin, Hematoxylin P.T.A., Reticulin and Reticulin Contrast. Primary role of the solution is mild oxidation of the section (usually combined with sulfuric acid) and additional enhancement of activities of reactive spots on the tissue sample.

### Product description

**POTASSIUM PERMANGANATE, 0.5% SOLUTION** – Potassium permanganate solution for use in special stains kits.

### Example of use of Potassium permanganate, 0.5% solution in Masson Fontana kit

#### Other sections and reagents that may be used in staining:

- Fixatives such as BioGnost's neutral buffered formaldehyde solutions: Formaldehyde NB 4%, Formaldehyde NB 10%
- Dehydrating/rehydrating agent, such as BioGnost's alcohol solutions: Histanol 70, Histanol 80, Histanol 95 and Histanol 100
- Clearing agents, such as BioClear xylene or a substitute, such as BioClear New agent on the aliphatic hydrocarbons basis
- Infiltration and fitting agent, such as BioGnost's granulated paraffin BioWax Plus, BioWax 56/68, BioWax Blue, BioWax Micro.
- Covering agents for microscopic sections and mounting cover glass, such as BioGnost's BioMount, BioMount High, BioMount M, BioMount New, BioMount New Low, BioMount DPX, BioMount DPX High, BioMount DPX Low, BioMount DPX Low Eco, BioMount C, BioMount Aqua, Canada Balsam
- High-quality glass slides for use in histopathology and cytology, such as VitroGnost SUPER GRADE, VitroGnost COLOR or one of more than 30 models of BioGnost's VitroGnost glass slides
- BioGnost's immersion media, such as Immersion oil, Immersion oil, types A, C, FF, 37, or Immersion oil Tropical Grade

### CAUTION:

Adhere to the following rules in order to achieve the best results:

- use distilled or demineralized high purity water **WITHOUT** any chlorine
- use completely clean laboratory glassware
- avoid contact between metal objects and solution (scissors, tweezers and so on)
- do not use sections fixed in fixatives that contain salts of heavy metals, such as mercury chloride and potassium dichromate because they may cause false positive reaction
- alkaline solutions during staining and may cause section dropping off the slide We suggest using positively charged glass slides

### Preparing the histological sections for staining

- Fixate the sample (Formaldehyde NB 4%, Formaldehyde NB 10%), rinse with water and dehydrate through series of ascending alcohol solutions (Histanol 70, Histanol 80, Histanol 95 and Histanol 100).
- Clear the sample with intermedium; in xylene (BioClear) or in a xylene substitute (BioClear New).
- Infiltrate and fit the sample in paraffin (BioWax Plus, BioWax 56/58, BioWax Blue, BioWax Micro).
- Cut the paraffin block to 4-6  $\mu$ m slices and place them on a VitroGnost glass slide.

### NOTE

Apply the reagent so it completely covers the section.

### Procedure for staining the section using Masson Fontana kit for 100 tests (MF-100T)

Note: Prepare two samples of the same tissue - one for control section, the other for diagnosis assessment

PREPARING THE CONTROL SECTION		
1.	Deparaffinize the section in xylene (BioClear) or in a xylene substitute (BioClear New)	3 exchanges, 2 min each
2.	Rehydrate using 100% alcohol (Histanol 100)	2 exchanges, 5 and 3 min
3.	Rehydrate using 95% alcohol (Histanol 95)	2 min
4.	Rehydrate in distilled (demi) water	2 min
5.	Treat with 5 drops of Potassium permanganate, 0.5% solution + 5 drops of Sulfuric acid, 0.5% solution	20 min
6.	Rinse in distilled water	
7.	Treat with Oxalic acid, 1% solution (add $\geq$ 5 drops)	5 min
8.	Gently rinse in distilled (demi) water	
	Resume the procedure from Step 13	
PREPARING THE SECTION FOR DIAGNOSIS ASSESSMENT		
9.	Deparaffinize the section in xylene (BioClear) or in a xylene substitute (BioClear New)	3 exchanges, 10 min each
10.	Rehydrate using 100% alcohol (Histanol 100)	2 exchanges, 5 and 3 min
11.	Rehydrate using 95% alcohol (Histanol 95)	2 min
12.	Rehydrate in distilled (demi) water	2 min
13.	Place the sections in incubation container (Petri dish or transport box)	

14.	Treat the sections with Silver ammonia solution, Masson Fontana. Discard the solution after using. (add $\geq 5$ drops)	overnight at room temperature or for 30-40 minutes at 56°C
	Note: Let Silver ammonia solution, Masson Fontana set for 10 min at room temperature before use	
15.	Rinse in distilled (demi) water	a few rinses
16.	Treat the sections with Sodium thiosulfate, 5% solution (add $\geq 5$ drops)	1-2 minutes
17.	Rinse in distilled water	a few rinses
18.	Stain the section with Nuclear Fast Red (Kernechtrot) reagent (add $\geq 5$ drops)	5 min
19.	Rinse in distilled water	
19.	Dehydrate using 70% alcohol (Histanol 70)	5 dips
20.	Dehydrate using 95% alcohol (Histanol 95)	5 dips
21.	Dehydrate using 100% alcohol (Histanol 100)	2 min
22.	Clear the section in xylene (BioClear) or in a xylene substitute (BioClear New)	2 exchanges, 2 min each

Immediately after clearing apply an appropriate BioMount medium for covering/mounting on the section. If BioClear xylene was used, use one of BioGnost's mounting xylene-based media (BioMount, BioMount High, BioMount M, BioMount DPX, BioMount C, or universal BioMount New). If BioClear New xylene substitute was used, the appropriate covering agent is BioMount New. Cover the section with a VitroGnost cover glass.

## Results

Melanin, argentaffin granules - black (diagnosis assessment section); black color is not present in the control section because of the melanin depigmentation process  
Nuclei - red

## Note

Microbiology staining procedures are not standardized and they depend on standard operating procedures of individual laboratories and the experience of the personnel conducting the staining procedure. Intensity of staining depends on the period of immersion in the dye. Depending on personal requests and standard laboratory operating procedures, sample processing and staining can be carried out according to other protocols.

## Preparing the sample and diagnostics

Use only appropriate instruments for collecting and preparing the samples. Process the samples with modern technology and mark them clearly. Follow the manufacturer's instructions for handling. In order to avoid mistakes, the staining procedure and diagnostics should only be conducted by authorized and qualified personnel. Use only microscope according to standards of the medical diagnostic laboratory.

## Safety at work and environmental protection

Handle the product in accordance with safety at work and environmental protection guidelines. Used solutions and out of date solutions should be disposed of as special waste in accordance with national guidelines. Chemicals used in this procedure could pose danger to human health. Tested tissue specimens are potentially infectious. Necessary safety measures for protecting human health should be taken in accordance with good laboratory practice. Act in accordance with signs and warnings notices printed on the product's label, as well as in BioGnost's material safety data sheet.
















## Storing, stability and expiry date

Keep Potassium permanganate, 0.5% solution in a tightly sealed original packaging at temperature between 4°C and 8°C. Do not freeze and avoid exposing to direct sunlight. Date of manufacture and expiry date are printed on the product's label.

## References

1. Melis, M., Carpino, F., Di Tondo, U., Ermes, E. Tecniche in anatomia patologica. 1989.
2. Prophet, E.B., Mills, B., Arrington, J., Sobin, L. Laboratory methods in histotechnology. American Registry of Pathology.
3. Bancroft, J.D., Gamble, M. Livingstone, C. Theory and practice of Histological Techniques – 5° edizione 2002.

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	Refer to the supplied documentation		Storage temperature range		Number of tests in package		Product code		European Conformity	 BIOGNOST Ltd. Medjugorska 59 10040 Zagreb CROATIA www.biognost.com	
	Refer to supplied instructions		Keep away from heat and sunlight		Valid until		Lot number		Manufacturer		
	For in vitro diagnostic use only		Keep in dry place		Caution - fragile						