

LITHIUM CARBONATE, SOLUTION

IVD *In vitro* diagnostic medical device



For use in Von Kossa kit

INSTRUCTIONS FOR USE

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

Introduction

Lithium carbonate, solution is a part of Von Kossa kit which is used for calcium deposits and calcium salt visualization. Silver ions from silver nitrate replace carbonate and phosphate calcium ions that, under strong source of light, in turn create microscopically visible silver glow. Treating the preparation with lithium carbonate prevents false positive staining from occurring. Counterstaining is achieved with Nuclear Fast Red (Kernechtrot) reagent.

Product description

- LITHIUM CARBONATE, SOLUTION**- Lithium carbonate aqueous solution

Example of using Lithium carbonate, solution in Von Kossa 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 52/54, BioWax 56/68, BioWax Blue
- Covering agent 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
- 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
- Other components of Von Kossa kit: Silver ammonia reagent (SAR-OT-100), Reducing buffer, solution (RP-OT-100), Sodium thiosulfate, 5% solution (NT5-OT-100) and Nuclear Fast Red (Kernechtrot) reagent (KR-OT-100)

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

- Fix the tissue sample well (4% NB Formaldehyde, 10% NB Formaldehyde), 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 52/54, BioWax Plus 56/58, BioWax 56/58, BioWax Blue).
- Cut the paraffin block to 4-6 μ m slices and place them on a VitroGnost glass slide.

Sample staining procedure

Pour the reagents into glass staining jars (Coplín, Hellendahl or Schifferdecker), return to original bottles after staining. Close tightly. Filter the reagents if necessary.

1.	Deparaffinize the section in xylene (BioClear) or in a xylene substitute (BioClear New)	3 exchanges, 2 min each
2.	Start rehydration by 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.	Immerse into Lithium carbonate, solution	10 min
6.	Rinse in distilled water	
7.	Immerse into Silver ammonia solution in dark room	60 min
8.	Rinse in distilled water	4 exchanges
9.	Immerse into Reducing buffer, solution until silver salt turns black	5 minutes or longer
10.	Rinse in distilled water	
11.	Immerse into Sodium thiosulfate, 5% solution	5 min
12.	Rinse in distilled water	
13.	Immerse into Nuclear Fast Red (Kernechtrot) reagent	5 min
14.	Rinse under tap water	2 min
15.	Dehydrate using 70% alcohol (Histanol 70)	2 exchanges, 30 seconds each
16.	Dehydrate using 95% alcohol (Histanol 95)	2 exchanges, 30 seconds each
17.	Dehydrate using 100% alcohol (Histanol 100)	30 seconds

18.	Dehydrate using 100% alcohol (Histanol 100)	2 min
19.	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.

Result

Bones and calcium deposits – black

Nuclei and cytoplasms – pink-red

Note

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 Lithium carbonate, solution in a tightly sealed original packaging at temperature of +15°C to +25°C. Keep in dry places, do not freeze and avoid exposing to direct sunlight. Date of manufacture and expiry date are printed on the product's label.

References

1. Bancroft, J.D., Gamble, M. (2002), Theory and practice of Histological Techniques, Churchill Livingstone, New York.
2. Prophet, Mills, Arrington, Sobin (1968), Laboratory methods in histotechnology. Stain methods of the Arm Forces Institute of Pathology, Washington D.C.

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	Refer to the supplied documentation		Storage temperature range		Number of tests in package		Product code		European Conformity
	Refer to supplied instructions		Keep away from heat and sunlight		Valid until		Lot number		Manufacturer
	For <i>in vitro</i> diagnostic use only		Keep in dry place		Caution - fragile				

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