BIOGNOST®

GOLD CHLORIDE, 0.2% SOLUTION

IVD *In vitro* diagnostic medical device CE

0.2% gold chloride aqueous solution (aurichloric acid, $HAuCl_4$)
INSTRUCTIONS FOR USE

REF Catalogue number: ZK02-OT-100 (100 mL)

Introduction

Gold chloride, 0.2% solution is a component of many special stains kits, such as Reticulin contrast kit (staining according to Gordon Sweets), Grocott, and P.A.S.M. kits (staining according to Gomori Jones). In those kits gold chloride provides toning of the section's image, and also stabilization of the dye on the section. After using gold chloride solution, it is usually followed by counterstain, such as Nuclear Fast Red (Kernechtrot) or Fast Green stain.

Product description

GOLD CHLORIDE, 0.2% SOLUTION – aqueous solution of aurichloric acid.

Example of using Gold chloride, 0.2% solution with Reticulin contrast and Grocott kits:

Preparing the histological sections for staining

- Fix the tissue sample tightly (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, BioWax Micro).
- Cut the paraffin block to 4-6 μm slices and place them on a VitroGnost glass slide.

NOTE: Apply the reagent so it completely covers the section.

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)

Sample staining procedure

a) Reticulin contrast kit for 100 tests (RET-100T) for detecting reticulin fibers

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.	Apply 5 drops of Potassium permanganate, 0.5% solution and 5 drops of Sulfuric acid, 3% solution.	5 min
6.	Rinse in distilled (demi) water	until the excessive reagent is washed off of the section
7.	Treat with Oxalic acid, 1% solution (add ≥5 drops)	1 min
8.	Rinse thoroughly in distilled (demi) water twice	until the excessive reagent is washed off of the section
9.	Treat with Ammonium iron sulfate, solution (≥5 drops)	3 min
10.	Rinse twice in distilled (demi) water	until the excessive reagent is washed off of the section
11.	Treat with Silver ammonia solution (≥5 drops)	3 min
12.	Rinse in distilled (demi) water	until the excessive reagent is washed off of the section
13.	Treat with 4% formaldehyde, alcoholic solution (≥5 drops)	5 min
14.	Rinse twice in distilled (demi) water	until the excessive reagent is washed off of the section
15.	Tone with Gold chloride, 0.2% solution	let it set for 2 min
16.	Rinse in distilled water	
17.	Treat the sections with Sodium thiosulfate, 5% solution (add ≥5 drops),	let it set for 2 min
18.	Rinse in distilled water	
19.	Stain with Nuclear Fast Red (Kernechtrot) reagent (add ≥5 drops)	let it set for 5 min
20.	Dehydrate using 70% alcohol (Histanol 70)	5 dips
21.	Dehydrate using 95% alcohol (Histanol 95)	5 dips
22.	Dehydrate using 100% alcohol (Histanol 100)	2 min
23.	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

Reticular and nerve fibres - dark purple to black, nuclei - pink to red
Collagen - ocher to black-brown, background - soft pink

b) Grocott kit for 100 tests for staining fungi

Preparation of methenamine-silver-borate working solution:

In 40 ml of redistilled (demi) water add contents of a single Methenamine borate packaging. Stir using glass stick until the contents dissolve completely. Then gradually add 2 ml of Silver nitrate, solution for Grocott kit (~50 drops) by stirring using glass stick.
Pour the reagents into glass staining jars (Coplin, Hellendahl or Schifferdecker), return to original bottles after staining. Close tightly. Filter the reagents if necessary.

1.	Prepare **silver-methenamine-borate working solution,** pour it into jar, cover with a glass lid and place in the water bath at 62°C	
	Note: we recommend using Coplin or Hellendahl jars	
2.	Deparaffinize the section in xylene (BioClear) or in a xylene substitute (BioClear New)	3 exchanges, 2 min each
3.	Rehydrate using 100% alcohol (Histanol 100)	2 exchanges, 3 and 2 min
4.	Rehydrate using 95% alcohol (Histanol 95)	2 min
5.	Rehydrate in distilled (demi) water	2 min
6.	Add Periodic acid, 1% solution (≥5 drops)	5 min for fungi oxidation
	Note: prolong the incubation period for basal membrane oxidation	11 min
7.	Rinse in double distilled (demi) water	6 exchanges, 5 seconds each
8.	Immerse the sections in previously heated methenamine-silver-borate working solution and incubate at 62°C. Check the section staining microscopically. If necessary, prolong the incubation period (if the fungi turn dark brown on light yellow background)	20 min for staining fungi
	Note: for staining basal membrane, incubate for 30 min and visually check until required staining intensity is achieved (basal membranes turn dark brown on light yellow background)	30 min
9.	Rinse in redistilled (demi) water (room temperature)	6 exchanges, 5 seconds each
10.	Add Gold chloride, 0.2% solution (≥5 drops)	30 seconds
11.	Rinse in redistilled (demi) water (room temperature)	6 exchanges, 5 seconds each
12.	Add Sodium thiosulfate, 2% solution (≥5 drops)	2 min
13.	Rinse well under tap water	2 min
14.	Add Fast Green F.C.F. contrast reagent (≥5 drops)	2-3 minutes
15.	Rinse in distilled (demi) water	
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.

Results

Basal membranes, glycogen, bacteria and fungi- black
Background - green

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.

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 Gold chloride, 0.2% solution in a tightly sealed original packaging at temperature between +2 °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. Gomori, G. (1939): The effect of certain factors on result of silver impregnation for Reticulum fibers, Am. J. Path. , 15; 493-495
2. Gordon et Sweet, H. (1936): A rapid method for silver impregnation of reticulum, Am. J. Path., 12: 545-551

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