

COLLOIDAL IRON KIT



IVD In vitro diagnostic medical device

Classified acc. to Regulation (EU) 2017/746 - Class A device

Six-reagent kit for visualizing acid mucopolysaccharides and proteoglycans

INSTRUCTIONS FOR USE

BASIC UDI broj	385889212HPC30708STARVF		
EMDN code	W01030708		
REF	Catalog number	Volume	UDI-DI number
KOL-100T		100 tests	03858892122310



Intended use and test principle

Colloidal iron kit is used for visualization of carboxylated and sulphated groups of acid mucins and proteoglycans. This method is based on the principle of binding positively charged ferric ions (Fe^{3+}) to negatively charged endings of acid mucopolysaccharides, proteoglycans and glycosaminoglycans (hyaluronic acid). Excessive reagents are rinsed while the bound ferric ions get visualized using Prussian Blue reaction that using potassium ferrocyanide causes light blue precipitations of iron ferrocyanide to appear. Finally, the sections are exposed to Van Gieson stain that selectively stains different tissue structures and in turn creates clear and visually rich contrast. The method can be combined with the P.A.S. method; that way glycogen and neutral mucopolysaccharides would get differentially stained characteristically magenta.

Product description

- **COLLOIDAL IRON KIT** – Six-reagent kit for visualizing acid mucins, hyaluronic acid and proteoglycans

The kit contains:	100 tests (KOL-100T)	Storage temperature
Acetic acid, Colloidal iron (A) solution	250 mL (OKA-OT-250)	15-25°C
Acetic acid, Colloidal iron (B) solution	2 x 30 mL (OKB-OT-30)	15-25°C
Colloidal iron, stock solution	30 mL (KOL-OT-30)	15-25°C
Potassium hexacyanoferrate, Colloidal iron solution	30 mL (KHCK-OT-30)	15-25°C
HCL reagent, Colloidal iron	30 mL (HCLK-OT-30)	15-25°C
Fuchsin Acid Van Gieson reagent	30 mL (FAG-OT-30)	15-25°C

Additional reagents and materials that can be used in this method

- 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 agent, such as BioClear xylene or its aliphatic hydrocarbon substitutes, such as BioClear New
- Infiltration and embedding agent, such as BioGnost's granulated paraffin BioWax Plus 56/58, BioWax 56/68, BioWax Blue
- Covering agents for microscopic sections and mounting cover glass, such as BioGnost's BioMount, BioMount High, BioMount M, BioMount New, BioMount DPX, BioMount DPX High, BioMount DPX Low, BioMount C, BioMount Aqua
- VitroGnost slides and coverslips for use in histopathology and cytology
- BioGnost's immersion oils, such as Immersion oil, Cedarwood oil, Immersion oils types A and C, FF, 37 or Tropical Grade

Preparation of histological sections for staining

- Fix (Formaldehyde NB 4%, Formaldehyde NB 10%) and process the tissue sample
- Embed the tissue in a paraffin block (BioWax 52/54, BioWax 56/58, BioWax Plus 56/58, BioWax Blue)
- Cut the paraffin block into 4-6 μ m thin slices and mount on a VitroGnost microscope slide

NOTE

Apply the reagent so it completely covers the section.

Histological sample staining procedure

1.	Deparaffinize in xylene (BioClear) or xylene substitute (BioClear New)	3 exchanges, 2 min each
2.	Rehydrate in 100% alcohol (Histanol 100)	2 exchanges, 5 and 3 min
3.	Rehydrate in 95% alcohol (Histanol 95)	2 min
4.	Rehydrate in distilled/demineralized water	2 min
5.	Gently rinse in Acetic acid, Colloidal Iron (A) solution	
6.	Add ≥ 15 drops of Acetic acid, Colloidal iron (B) solution, and ≥ 5 drops of Colloidal Iron, stock solution. Gently stir Note: Use fresh solution, discard after use. Make sure to keep required ratio of drops of Acetic acid, Colloidal iron, (B) solution and Colloidal iron, stock solution!	30 min
7.	Carefully and briefly rinse the slide in Acetic acid, Colloidal Iron (A) solution	
8.	Treat with Acetic acid, Colloidal iron (A) solution (add ≥ 5 drops)	3 exchanges, 3 min each
9.	Add ≥ 5 drops of Potassium hexacyanoferrate, Colloidal Iron solution, and ≥ 5 drops of HCL reagent, Colloidal Iron Note: Use fresh solution, discard after use. Make sure to keep required ratio of drops of Potassium hexacyanoferrate, Colloidal iron solution and HCL reagent, Colloidal iron!	20 min
10.	Rinse in distilled/demineralized water	3 exchanges, 5 sec each
11.	Stain using Fuchsin Acid Van Gieson reagent (add ≥ 5 drops) Note: longer exposure provides a more intense red	5-10 sec
12.	Dehydrate in 95% alcohol (Histanol 95)	2 exchanges, 5 dips
13.	Dehydrate in 100% alcohol (Histanol 100)	2 exchanges, 2 min each
14.	Clear in xylene (BioClear) or 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 VitroGnost cover glass.

Result

Acid mucins, hyaluronic acid – blue
 Collagen – hues of red
 Muscle tissue, cytoplasm, erythrocytes, glial fibers – yellow

Limitations

This product is intended for professional laboratory use for diagnostic purposes only. Deviations from the staining procedure described in this Instruction for use may cause differences in staining results.

Sample preparation and diagnostics

Use only appropriate instruments for collecting and preparing the samples. Process the samples using modern technology and mark them clearly. Be sure to follow the manufacturer's handling instructions. To avoid errors, staining, and diagnosis can only be carried out by qualified personnel. Use a microscope equipped according to medical diagnostic laboratory standards. To avoid an incorrect staining result, it is advised to use a positive and negative control.

If a serious incident occurs during use of this product or as a result of its use, please report it to the manufacturer or authorized representative and competent authority.

Safety at work and environmental protection

Handle the product in accordance with occupational health and environmental protection guidelines. Used and expired solutions must be disposed of as special waste following national guidelines. Reagents used in this procedure can pose a danger to human health. The examined tissue samples are potentially infectious, and it is necessary to take the measures needed to protect human health in accordance with the guidelines of good laboratory practice. It is mandatory to read and act according to the information and warning signs printed on the product label and in the Safety Data Sheet, which is available on request.

Storage, stability, and shelf life

Upon receipt, store the product in a dry place and well-closed original packaging at a temperature of +15 °C to +25 °C. Do not freeze or expose to direct sunlight. After first opening, the product can be used until the specified expiry date, if stored properly. The expiration date is printed on the product label.

References

1. Bancroft, J.D., Gamble, M. (2002), Theory and practice of Histological Techniques, 6th ed., Churchill Livingstone
2. Culling C.F.A., et al (1985): Cellular Pathology Technique, 4th ed., Butterworth-Heinemann
3. Mowry, R.W. (1963): The special value of methods that color both acidic and vicinal hydroxyl groups in the histochemical study of mucins. With revised directions for the colloidal iron stain, the use of alcian blue g8x and their combinations with the periodic acid-schiff reaction, Ann NY Acad Sci , 106(2)
4. Nito Y., Stokes J.R. (1960) An improved colloidal iron staining reagent, Stain Technol, 103(35)

Warnings and precautions regarding the materials contained in the product:		
	H226	Flammable liquid and vapor.
	H315	Causes skin irritation.
	H319	Causes serious eye irritation..
	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	P260	Do not breathe dust/fume/gas/mist/vapors/spray.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
305+P351+P338	IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.	
P303 + P361+P353	IF ON SKIN (or hair): take off immediately all contaminated clothing. Rinse skin with water (shower).	
P308+P313	IF exposed or concerned: get medical advice/attention.	

KOL-IFU_ENV3, 25.02.2026., IŠP

 Manufacturer	 Batch code	 Temperature limit	 <i>In vitro</i> diagnostic medical device	 Unique device identifier
 Date of manufacture	 Catalogue number	 Consult instructions for use	 Contains sufficient for <n> tests	
 Use-by date	 Fragile, handle with care	 Caution	 European conformity	

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Version	Description / reason for change	Date
3	Revised acc. to Regulation (EU) 2017/746 - IVDR	25.02.2026.