BIOGNOST®

# VAN GIESON TRICHROME KIT

CE IVD *In vitro* diagnostic medical device Classified acc. to Regulation (EU) 2017/746 - **Class A** device

## Three-reagent kit for staining collagen fibers

## INSTRUCTIONS FOR USE

| **BASIC UDI number** | 385889212HPC30708STARVF | |
|---|---|---|
| **EMDN code** | W01030708 | |
| REF **Catalog number** | **Volume** | **UDI-DI number** |
| VG-100T | 100 tests | 03858892125564 |
| VG-K-100 | 3x100 mL | 03858892125571 |
| VG-K-500 | 3x500 mL | 03858892125823 |

**Intended use and test principle**

Van Gieson trichrome kit is used for staining collagen, muscle tissue, keratinized epithelium, cytoplasm, glial fibers, and erythrocytes. Fuchsin Acid Van Gieson is a component of the kit and it contains two dyes (acid fuchsin, picric acid) that simultaneously stain different tissue structures. Acid fuchsin stains collagen fibers intensive red while picric acid stains muscle fibers, erythrocytes and glial fibers yellow. Amyloids, hyalin, colloid and mucosa are stained in nuances between red and yellow. Hematoxylin, Weigert A and Ferri reagent, Weigert B make up Weigert hematoxylin that creates stable cellular nuclei coloration.

**Product description**

- **VAN GIESON TRICHROME KIT** – Kit for staining collagen connective tissue

| **The kit contains:** | **100 tests (VG-100T)** | **3 x 100 mL (VG-K-100)** | **3 x 500 mL (VG-K-500)** | **Storage temperature** |
|---|---|---|---|---|
| Hematoxylin, Weigert A | 30 mL (HEMA-OT-30) | 100 mL (HEMA-OT-100) | 500 mL (HEMA-OT-500) | 15-25°C |
| Ferri reagent, Weigert B | 30 mL (FR-OT-30) | 100 mL (FR-OT-100) | 500 mL (FR-OT-500) | 15-25°C |
| Fuchsin Acid Van Gieson reagent | 30 mL (FAG-OT-30) | 100 mL (FAG-OT-100) | 500 mL (FAG-OT-500) | 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 $\mu$m thin slices and mount on a VitroGnost microscope slide

**NOTE**

Apply the reagent so it completely covers the section.

**Histological sample staining procedure**

**a) using kit for 100 tests (VG-100T)**

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| **1.** | Deparaffinize in xylene (BioClear) or in a 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.** | Apply 5 drops of Hematoxylin, Weigert A and 5 drops of Ferri reagent, Weigert B. Gently stir and let it react | 15 min |
| **6.** | Rinse under tap water | 3 min |
| **7.** | Stain using Fuchsin Acid Van Gieson reagent (≥5 drops) | 3-5 min |
| | Note: Fuchsin Acid Van Gieson is a counterstain and by longer exposure (up to 5 minutes) stronger background staining is achieved. | |
| **8.** | Quickly dehydrate through 96% and 100% alcohol (Histanol 96 and Histanol 100) | |
| | Note: the amount of yellow dye rinsed rises the longer the sections stays immersed | |
| **9.** | 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.

*To avoid fading of the sample (loss of yellow) it is recommended to clear in xylene (BioClear) and mount the cover glass using BioMount DPX or BioMount DPX New covering/mounting medium.

**b) using three – reagent kit, 100 mL, 500 mL (VG-K-100, VG-K-500)**

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

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|---|---|---|
| **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.** | Prepare Weigert hematoxylin woking solution: mix equal volumes of Hematoxylin, Weigert A and Ferri reagent, Weigert B<br>Note: the working solution is stable for approx. 2 weeks. Prepare the working solution of volume adequate for staining test sections. | |

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| **6.** | Immerse into Hematoxylin Weigert working solution | 15 min |
| **7.** | Rinse under tap water | 3 min |
| **8.** | Immerse into Fuchsin Acid Van Gieson reagent | 3-5 min |
| | Note: Fuchsin Acid Van Giesion is a counterstain; prolonged exposition period (up to 5 minutes) provides more intensive background staining | |
| **9.** | Quickly dehydrate through 96% and 100% alcohol (Histanol 96 and Histanol 100 | |
| | Note: the amount of yellow dye rinsed rises the longer the sections stays immersed | |
| **10.** | 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 VitroGnost cover glass.

*To avoid fading of the sample (loss of yellow) it is recommended to clear in xylene (BioClear) and mount the cover glass using BioMount DPX or BioMount DPX New covering/mounting medium.

**Result**

Nuclei – brown – black
Collagen – red
Muscle tissue, glial fibers – yellow
Colloid, mucosa, hyalin, amyloid, keratinized epithelium – hues between yellow and red

**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, mounting of the slides, 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. Culling, C.F.A. (1974): Handbook of histopathological and histochemical techniques, 2 ed ed., Butterworth, London, UK.
2. Lillie, R.D. (1945): Studies on selective staining of collagen with acid aniline dyes, J. Technical Methods, 25:1
3. Sheehan D.C. et Hrapchak, B.B. (1980): Theory and Practice Histotechnology, 2nd ed., CV Mosby, St. Louis, (MO), pp 52, str. 14-167.
4. Van Gieson, I. (1889): Laboratory notes of technical methods for the nervous system, New York Med. J., 50: 57-60


**Warnings and precautions regarding the materials contained in the product:**

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| H225 | Highly flammable liquid and vapor. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P233 | Keep container tightly closed. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |

VG-IFU_ENV8, 28.04.2026., IŠP

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| | Manufacturer | LOT | Batch code | °C | Temperature limit | IVD | *In vitro* diagnostic medical device | UDI | Unique device identifier |
| | Date of manufacture | REF | Catalogue number | | Consult instructions for use | Σ | Contains sufficient for <n> tests | | |
| | Use-by date | | Fragile, handle with care | | Caution | CE | European conformity | | |


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| Version | Description / reason for change | Date |
|---|---|---|
| 8 | Correction of UDI numbers. | 28.04.2026. |