BIOGNOST®

BIOSCHIFF REAGENT

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

Schiff's reagent for detecting aldehydes and mucous substances

INSTRUCTIONS FOR USE

BASIC UDI number	385889212HPC30708STARVF	
EMDN code	W01030708	
REF **Catalog number**	**Volume**	**UDI-DI number**
BS-OT-100	100 mL	03858888822378
BS-OT-500	500 mL	03858888822385
BS-OT-1L	1000 mL	03858890001594

Intended use and test principle

BioSchiff reagent is a colorless solution that changes to violet (magenta) in the presence of aldehydes. The intensity of the color obtained depends on the amount of reactive glycol structures in the tissue. It is prepared by the reduction of pararosaniline by using sulfuric acid. Schiff's reagent is used with various chemical methods, and one of the most common and most widely used ones is P.A.S. staining (Periodic Acid Schiff). The P.A.S. staining is based on oxidation reaction with the presence of periodic acid and Schiff's reagent. Periodic acid makes the molecules containing glycol groups create aldehydes affected by Schiff's reagent that stains them violet (magenta). This method is most commonly applied to liver and muscle cells. Schiff's reagent can be used for DNA detecting according to Feulgen.

Product description

- **BIOSCHIFF REAGENT** - Pararosaniline, hydrochloric acid and sodium metabisulfite solution with added stabilizer.

Example of using BioSchiff reagent as a component of P.A.S. kit

Additional reagents and materials that can be used for processing and rehydration/dehydration for 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 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
- BioGnost's immersion oils, such as Immersion oil, Cedarwood oil, Immersion oils types A and C, FF, 37 or Tropical Grade
- Remaining components of P.A.S. kit: Periodic acid, 0.8% solution, Sodium metabisulphite, solution, HCL reagent, P.A.S. and Hematoxylin ML

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 μm thin slices and mount on a VitroGnost microscope slide

Preparation of additional solutions used in staining

- Sulfite solution
  Mix 10 ml of Sodium metabisulfite, solution with 10 ml of HCL reagent, P.A.S. Add another 200 ml of tap water, then mix.
  Note: Prepare the sulfite solution shortly before using.

NOTE

Apply the reagent so it completely covers the section.

The bottle containing BioSchiff reagent must be tightly closed in order to avoid SO2 evaporation and to maintain reagent quality.

Sample staining procedure according to the P.A.S. method

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.	Treat with Periodic acid, 0.5% solution	5 min
6.	Rinse under tap water	3 min
7.	Rinse with distilled/demineralized water	10 sec
8.	Treat with BioSchiff reagent	15 min
9.	Pour the reagent off the slide without rinsing	
10.	Treat with sulfite solution	3 exchanges, 2 min each
	Note: apply the sulfite solution to the slide, after 2 minutes drain the reagent from the slide and repeat the procedure twice; do not rinse between changes	
11.	Rinse under tap water	3 min
12.	Stain with Hematoxylin ML	2 min
13.	Rinse under tap water	3 min
14.	Dehydrate in 70% alcohol (Histanol 70)	5 dips
15.	Dehydrate in 95% alcohol (Histanol 95)	5 dips
16.	Dehydrate in 100% alcohol (Histanol 100)	2 min
17.	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

Nuclei – blue
Polysaccharides, glycogen, neutral mucopolysaccharides, mucoproteins, glycoproteins, glycolipids, phospholipids, basement membrane, collagen – violet

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 in the well-closed original packaging at a temperature of +15 °C to +25 °C. Do not freeze and do not expose to direct sunlight. After opening, store the reagent at +2 °C to +8 °C. After the first opening, the product can be used until the stated expiry date, provided it is stored properly. The manufacturing date and expiry date are printed on the product label.

References

1. Bancroft, J. D. et Gamble, M. (2002): Theory and Practice of Histological Techniques, 5th ed., Churchill Livingstone, London.
2. Kiernana, J.A. (1999): Histological and histochemical methods: Theory and practice, 3rd ed., Butterworth Heinemann, Oxford, UK.
3. Kodousek, R. (1969): A new, rapid method of preparing Schiff's reagent, *Histochemical Journal,* 1, str. 277-278.

Warnings and precautions regarding the materials contained in the product:	
EUH031	Contact with acids liberates toxic gas.
P281	Use personal protective equipment as required.

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	Manufacturer	LOT	Batch code		Consult instructions for use	CE	European conformity
	Date of manufacture	REF	Catalogue number		Caution	UDI	Unique device identifier
	Use-by date	°C	Temperature limit	IVD	*In vitro* diagnostic medical device		

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Version	Description/ reason for change	Date
13	Revised in acc. to Regulation (EU) 2017/746 - IVDR	09.02.2026.