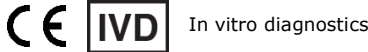


MGG JetDye-AF Kit

Staining reagents for manual and automated staining of blood smears



Intended use

MGG JetDye-AF Kit (May-Grünwald-Giemsa) contains the staining solutions May-Grünwald JetDye-AF and Giemsa JetDye-AF. May-Grünwald-Giemsa staining is a special staining technique used in microscopy to prepare cells and tissue for examination under the microscope.

The staining combines components of Giemsa and May-Grünwald stains to achieve improved contrast of cell structures.

The May-Grünwald-Giemsa stain is widely used in haematocytology and is used to identify different cell types and their morphology. It is particularly helpful in the diagnosis of blood diseases and in the examination of cells from bone marrow samples. Due to the special combination of dyes, it enables differentiated visualization of cell nuclei, cytoplasm and other cellular components under the microscope.

Principle

May-Grünwald-Giemsa staining is based on the principle of differentiation of cell components by specific dyes contained in the various solutions. The principle is based on the affinity of the dyes to certain cellular components, which leads to different staining and thus makes the structure and morphology of the cells visible under the microscope.

Fixation of the cells: First, the cells to be examined are fixed on a slide to preserve and maintain their morphology.

May-Grünwald staining solution: This solution contains the May-Grünwald dye, which stains cell structures such as cell nuclei and cytoplasm.

Giemsa staining solution: After the cells have been stained with the May-Grünwald solution, they are stained with the Giemsa staining solution. This solution contains Giemsa dye, which binds to various cellular components, including DNA, RNA and proteins. Giemsa staining allows a more detailed examination of cell structures and facilitates the identification of different cell types.

This staining method stains the cells and their components in high contrast, allowing detailed examination and identification under the microscope.

The MGG JetDye-AF solutions are alcohol-free staining solutions.

Sample material

Whole blood

Reagents

Cat. Nr.	RG2209010	
MG JetDye-AF		
Cat.No.	RG2209008	1 x 500 ml
Giemsa JetDye-AF		
Cat.No.	RG2009007	1 x 500 ml
Cat. Nr.	RG2209024	
MG JetDye-AF		
Cat.No.	RG2209004	1 x 1000 ml
Giemsa JetDye-AF		
Cat.No.	RG2009003	1 x 1000 ml

Additionally required reagents (optional)

JetBuffer pH 6.4		
Cat.No.	RG2209028	1 x 1000 ml
Jetuffer pH 6.8		
Cat.No.	RG2209027	1 x 1000 ml
JetBuffer pH 7.2		
Cat.No.	RG2209005	1 x 1000 ml

Required specific equipment

1. Microscope slides
2. Methanol for sample fixation
3. JetBuffer pH 6.4 or JetBuffer pH 6.8 or JetBuffer pH 7.2

Sample preparation

Sample collection should only be performed by trained personnel. All samples must be clearly labeled. Suitable instruments must be used for sample collection and preparation. Follow the manufacturer's instructions for application and use. Blood smears must be completely dry before staining. Dry on a slide warmer at 37–40 °C for 1 hour or overnight in a dehumidified chamber at room temperature. The background of the smear may show blue to gray streaks after 6 hours. Blood smears should be fixed within 6 hours of drying and then stained at room temperature within 18 hours. To fix blood smears, it is necessary to first fix them with methanol for 6 minutes and then let them dry for 10 minutes before beginning the staining process.

Drying and fixation		
Steps		Time
1a.	Slide heater or incubator at 37-40°C	1 h
or		
1b.	Dehumidified chamber 26-32°C	6 h
2.	Methanol fixation (In a staining cell)	6 min
3.	Air drying	10 min
5.	staining	-

Reagents preparation

MGG JetDye-AF Kit consists of MG JetDye-AF and Giemsa JetDye-AF. MG JetDye-AF is ready to use. Giemsa JetDye-AF must be diluted 1:5 with JetBuffer before manual staining. Please note that no dilution of Giemsa JetDye-AF is required for automatic staining.

Thoroughly mix before use. Please read the instructions carefully before staining. For microscopic analysis of stained samples, a 40x objective or a 100x objective with oil is recommended.

Please use your preferred JetBuffer (see Additional Reagents required).

Test capacity

Manual up to 1000 slides with 1000 ml

ColorJet Nano up to 500 slides with 1000 ml

Application

Manual staining method and protocol

The specified times should be adhered to guarantee optimal staining results.

Total processing time: 22 minutes		
Steps	Reagent	Time (mm:ss)
1.	Pre-fixed smear	
2.	incubate with MG JetDye-AF	05:00
3.	rinse with JetBuffer	01:00
4.	incubate with Giemsa-JetDye-AF	15:00



	(diluted 1:5)	
5.	rinse with JetBuffer	00:30
6.	rinse with JetBuffer	00:30
7.	Air dry	

System application for the automated staining system ColorJet Nano

The specified times should be adhered to ensure optimal staining results. Please follow the instructions for the ColorJet Nano. Giemsa JetDye-AF should not be diluted. The system will automatically perform the dilution.

Sample protocol for the ColorJet Nano:

Total processing time: 12:40 minutes (up to 60 slides per hour)		
Steps	Reagent	Time (mm:ss)
1.	Pre-fixed smear	
2.	MG JetDye-AF	02:00
3.	JetBuffer pH 6.8	00:40
4.	Giemsa-JetDye-AF	09:00
5.	JetBuffer pH 6.8	01:00
6.	Air dry	

Results and performance

Cells / Organelles	Expected staining
Cell nuclei or chromatin	dark blue to violet
Cytoplasm of lymphocytes	blue
Cytoplasm of monocytes	blue
Neutrophil granules	light violet to purple
Eosinophil granules	red to brown
Basophil granules	dark violet to black
Platelets	violet to dark violet
Red blood cells	pink to reddish-brown

Technical notes:

The microscope used for evaluating the staining results should meet the requirements of a medical diagnostic laboratory. If you are using automated staining systems, please follow the instructions provided by the system supplier and software.

Storage

Store MGG JetDye-AF Kit components at **+2°C to +40°C**.

Working temperature

For best results use MGG JetDye-AF Kit components at **+21°C to +28°C**.

Shelf Life

MGG JetDye-AF Kit can be used until the specified expiration date. Bottles should always be tightly closed when stored.

Disposal

This product must be disposed of in accordance with local regulations and laws. The packaging must be disposed of according to current disposal guidelines. Reagents that have exceeded their shelf life must be disposed of as hazardous waste according to local guidelines.

Analytical performance characteristics

MGG JetDye-AF Kit visualizes biological structures as described in the "Results and Performance" section of this user manual. The use of the product should only be conducted by professional users.

Diagnostics

Diagnoses should only be made by professional users. Further tests must be selected and conducted using recognized methods. Appropriate controls should be performed with each application to avoid incorrect results.

Additional instructions

- For professional use only.
- National guidelines for occupational safety and quality assurance must be followed.
- Effective measures to protect against eye contact must be taken in accordance with laboratory guidelines.
- If a serious incident occurs during the use of this product or as a result of its use, please report it immediately to the manufacturer and/or its authorized representative, as well as to your national authority.
- If necessary, filter before use.

Main components of the product

Dyes: C.I. 52015; C.I. 52005; C.I. 45380	<1%
dist. water	<23%
Solvent	<75%
Stabilizer	<1%

Hazard classification, warning, and precautions

- Please refer to the hazard classification indicated on the label and the information in the safety data sheet.
- The safety data sheet is available in the download area of our website (www.bio-gram.net) and on request.
- May cause allergic reactions.
- Please consult the safety data sheets and take the necessary precautions for the use of laboratory staining reagents.
- This mixture is not classified as hazardous within the meaning of Regulation (EC) No 1272/2008.

Precautions

See MSDS MGG JetDye AF Kit (Cat. No. RG2209010, RG2209024)

Literature

- H. Thieml (2000), ATLAS de poche d'Hématologie. Médecine-Sciences Flammarion
- M. Mulisch, U. Welsch, (2015), Romeis - Mikroskopische Technik. Springer Spektrum, 19. Auflage
- R.W. Horobin and J.A. Kiernan (2002), Conn's Biological Stains: A Handbook of Dyes, Stains and Fluorochromes for Use in Biology and Medicine. A Biological Stains Commission Publication, 10th Edition
- Research Malaria Microscopy Standards Working Group (2015). Microscopy for the detection, identification and quantification of malaria parasites on stained thick and thin films. Geneva: World Health Organization





Please refer to the user manual



Manufacturer



Article Number/
Catalog Number



Batch number



In-vitro diagnostics



Unique Device indicator



Attention, consult the attached documents



Use until YYYY-MM-DD



Temperature limit



Do not use if packaging is damaged

