

## HAEMATOLOGICAL STAINS

Staining of human clinical specimens, for subsequent visualisation by microscopy.

For professional use only

Single use

Medical device for In Vitro Diagnostic

### Intended use:

Haematological stains are staining reagents intended for use in cellular diagnostics in human medicine, in particular for the haematological and clinical-cytological examination of blood samples of human origin.

The major part of the haematological staining methods are intended for stain human blood extensions to highlight haematopoietic cells, chromosomes, parasites or other pathogens and are based on the use of Romanowsky stain. This stain has a mixture of eosine and methylene blue. Among these methods there are Wright, May-Grünwald, Giemsa and the fast staining technique.

### General precaution:

- Not suitable for any other application than its intended use.
- Do not use if packaging is damaged.
- Do not use the product if it has changed its original color.
- Do not use if expiration date is overcome.
- Manage as hazardous waste.
- For its storage, keep the product closed at room temperature in a well-ventilated area and away from any hot or ignition points.

### EOSIN-METHYLENE BLUE ACCORDING TO WRIGHT

#### Reagent:

Code: 808200 -- Bottle of 250 ml

#### Instructions for use:

1. Take a clean grease-free slide.
2. Using the ground edge of a slide, thinly spread a drop of blood deposited on and near one end of another slide.
3. Dry the smear at room temperature.
4. Cover with 1 ml of stain during 1 minute for its action as a fixer.
5. Then add 1 ml water (pH 7.2).
6. Leave the stain to act for 2-4 minutes.
7. Rinse with water (pH 7.2).
8. Dry in a vertical position.

**Note:** As it is a fast staining, it is recommended to keep the smear as thin as possible.

### EOSIN-METHYLENE BLUE ACCORDING TO MAY-GRÜNWARD

#### Reagents:

Code: 808000 -- Bottle of 250 ml

Code: 808001 -- Bottle of 1000 ml

#### Instructions for use:

1. Take a clean grease-free slide.
2. Using the ground edge of a slide, thinly spread a drop of blood deposited on and near one end of another slide.
3. On the smear dried at room temperature (not fixed), add 0,5 ml of May-Grünwald solution and let it to act during 2-3 minutes.
4. Add an equal amount of water (pH 7.2).
5. Mix carefully both solutions.
6. Leave for 5-10 minutes.
7. Rinse the slide and dry upright.

### AZUR-EOSIN-METHYLENE BLUE ACCORDING TO GIEMSA

#### Reagent:

Code: 808100 -- Bottle of 250 ml

Code: 808101 -- Bottle of 1000 ml

### Instructions for use:

1. Take a clean grease-free slide.
2. Using the ground edge of a slide, thinly spread a drop of blood deposited on and near one end of another slide.
3. Fix the smear with methanol and dry at room temperature.
4. Flush the slide with solution made of 10 drops of Giemsa solution in 10 ml water (pH 7.2).
5. Leave for 25 minutes.
6. Rinse the slide with water and dry upright.

### FAST STAINING OF BLOOD SMEARS

#### Reagent:

Code: 805013 -- Four bottles of 250 ml (Two bottles of A stain and two of B stain).

#### Instructions for use:

1. Prepare a thin, homogeneous blood smear in a slide.
  2. Fix it with methanol for 2-3 minutes.
  3. Immerse it in a container with Deltalab A stain (or totally cover the preparation).
  4. Wait 5 seconds.
  5. Drain the preparation in the edge of the container.
  6. Rinse the smear in a container with clean water.
  7. Let it drain.
  8. Immerse the slide in Deltalab B stain (or totally cover the preparation).
  9. Wait 10 seconds.
  10. Drain the excess of stain.
  11. Rinse in a second container with water.
  12. Drain the excess of liquid and maintain it in an inclined position until it is completely dried.
  13. The extension must have a mauve colour, between blue and red
- This method has the advantage that the laboratory can adapt the colour of the smear to their preferences varying the time of the dye contact.

**Note:** Dyes can be used several times, but is necessary to filter them every 2-4 days, depending on the number of extensions which are daily stained.








**Results:** In an extension correctly stain, the cells appear in the following way:

- Neutrophils: The cytoplasm will be dyed in pink colour and inside, the small granules will be dyed in mauve colour.
- Eosinophils: The cytoplasm will be dyed in pink colour and inside, there can be observed big granules dyed in red colour.
- Monocytes: The cytoplasm will be dyed in grey colour.
- Lymphocytes (big): The cytoplasm will be dyed in light blue colour.
- Lymphocytes (small): The cytoplasm will be dyed in dark blue colour.
- Basophils: Cell full of granules in dark purple colour.
- Erythrocytes: Cells in light red colour.
- Platelets: Particles in purple-pink colour.

### References:

1. John d. Bancroft, Marilyn Gamble. Theory and Practice of Histological Techniques, Churchill Livingstone Elsevier, Sixth Edition, 2008.
2. J. A. Kiernan et al. Histological & Histochemical Methods, Pergamon Press, Second Edition, 1990.
3. Paul Lopez Cardozo et al. Atlas of clinical cytology, EM edition medizing, 1968.
4. Horobin, R.W. and Kiernan, J.A. Conn's Biological Stains: A Handbook of Dyes, Stains and Fluorochromes for Use in Biology and Medicine. Bios, 10th Edition, 2002.

### Symbol glossary:

 REF	Catalogue number	 LOT	Batch number	 <a href="http://www.deltalab.es">www.deltalab.es</a>	Consult instructions for use on the website <a href="http://www.deltalab.es">www.deltalab.es</a> or in the link <a href="http://bit.ly/eifus">http://bit.ly/eifus</a>	 QTY	Quantity	 IVD	In vitro diagnostic medical device	 CE	CE marking
	Do not re-use		Do not use if package is damaged		Keep away from sunlight		Manufacturer		Use-by-date		

In case of a serious incident\* related to the product, notify to Deltalab, S.L. as well as the competent authority of the State in which the user is established.

\* A "serious incident" is understood as one that entails the death, or serious deterioration of the health of the patient or user or a serious threat to public health.

