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Microscopy

Methyl blue (C.I. 42780)

for microscopy



In Vitro Diagnostic Medical Device



This staining dye "Methyl blue (C.I. 42780) - for microscopy" is used for human-medical cell diagnosis and serves the purpose of the histological investigation of sample material of human origin. It is a dry staining dye that is used to prepare a staining solution, that when used together with other in vitro diagnostic products from our portfolio makes target structures in histological specimen materials evaluable for diagnostic purposes (by fixing, embedding where necessary, staining with the above methylblue solution, counterstaining, mounting).

Principle

Methyl blue belongs to the group of triaminotriphenylmethane dyes. Methyl blue, aniline blue and water blue are usually mixtures of much the same components. Methyl blue and aniline blue are so similar that both dyes are recorded under C.I. 42780 and Color Index Name "Acid blue 93". Water blue is recorded under C.I. 42755 with the Color Index Name "Acid blue 22".

Methyl blue, aniline blue and water blue are widely used in polychrome staining methods. The polychrome stains using especially mixtures with orange G or eosin. Besides methyl blue and aniline blues are used for staining of histones, for the determination of nuclear maturity, for demonstration of viability of sperms, resin embedded specimen can be stained with methyl blue also.

Sample material

Sections of Bouin-fixed, paraffin-embedded tissue (3 - 5 µm thick paraffin sections) are used as starting material.

Reagents

Cat. No. 116316
Methyl blue (C.I. 42780) for microscopy 50 g, 1 kg
Color Index No.: 42780
Color Index Name: Acid blue 93

Also required:

Cat. No. 100583 Tungstophosphoric acid hydrate for analysis EMSURE® 100 g, 250 g
Cat. No. 100974 Ethanol denatured with about 1 % methyl ethyl ketone for analysis EMSURE® 1 l, 2.5 l
Cat. No. 105231 Fuchsin acid (C.I. 42685) for microscopy Certistain® 25 g
Cat. No. 115925 Orange G (C.I. 16230) for microscopy Certistain® 25 g

Sample preparation

The sampling must be performed by qualified personnel. All samples must be treated using state-of-the-art technology. All samples must be clearly labeled. Suitable instruments must be used for taking samples and their preparation. Follow the manufacturer's instructions for application / use. Deparaffinize and rehydrate sections in the conventional manner.

Reagent preparation

Fuchsin acid solution

For preparation of approx. 100 ml solution mix:

Fuchsin acid (C.I. 42685) Certistain®	0.5 g
Distilled water	100 ml
dissolve and filter	

Methyl blue-Orange G solution

For preparation of approx. 100 ml solution mix:

Methyl blue (C.I. 42780)	0.15 g
Orange G (C.I. 16230) Certistain®	2 g
Tungstophosphoric acid hydrate	1 g
Distilled water	100 ml
dissolve and filter	

The freshly prepared staining solutions should be filtered before use.

Procedure

Polychrome staining

Staining in the staining cell

Deparaffinize histological slides in the conventional manner and rehydrate in a descending alcohol series.

The slides should be allowed to drip off well after the individual staining steps, as a measure to avoid any unnecessary cross-contamination of solutions.

The stated times should be adhered to to guarantee an optimal staining result.

Slide with paraffin section	
Distilled water	1 min
Fuchsin acid solution	5 min
Methyl blue-Orange G solution	20 min
Distilled water	rinse briefly
Ethanol 96 %	1 min
Ethanol 96 %	1 min
Ethanol 100 %	1 min
Ethanol 100 %	1 min
Xylene or Neo-Clear®	1 min
Xylene or Neo-Clear®	1 min
Mount the Neo-Clear®-wet slides with Neo-Mount® or the xylene-wet slides with e.g. Entellan® new and cover glass.	

After dehydration (ascending alcohol series) and clarification with xylene or Neo-Clear®, histological slides can be covered with non-aqueous mounting agents (e.g. Entellan® new or Neo-Mount®) and a cover glass and can then be stored.

The use of immersion oil is recommended for the analysis of stained slides with a microscopic magnification >40x.

Result

Nuclei	red
Cytoplasm	pink
Collagen, mucin	blue

Technical notes

The microscope used should meet the requirements of a medical diagnostic laboratory. When using histoprocessors and automatic staining systems, please follow the instructions for use supplied by the supplier of the system and software. The freshly prepared staining solutions should be filtered before use. Remove surplus immersion oil before filing.

Diagnostics

Diagnoses are to be made only by authorized and trained personnel. Valid nomenclatures must be used. Further tests must be selected and implemented according to recognized methods. Suitable controls should be conducted with each application in order to avoid an incorrect result.

Storage

Store Methyl blue (C.I. 42780) - for microscopy at +5 °C to +30 °C.

Shelf-life

Methyl blue (C.I. 42780) - for microscopy can be used until the stated expiry date.

After first opening of the bottle, the contents can be used up to the stated expiry date when stored at +5 °C to +30 °C.

The bottles must be kept tightly closed at all times.

Additional instructions

For professional use only.

In order to avoid errors, the application must be carried out by qualified personnel only.
National guidelines for work safety and quality assurance must be followed.
Microscopes equipped according to the standard must be used.

Protection against infection

Effective measures must be taken to protect against infection in line with laboratory guidelines.

Instructions for disposal

The package must be disposed of in accordance with the current disposal guidelines.
Used solutions and solutions that are past their shelf-life must be disposed of as special waste in accordance with local guidelines. Information on disposal can be obtained under the Quick Link "Hints for Disposal of Microscopy Products" at www.microscopy-products.com. Within the EU the currently applicable REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 applies.

Auxiliary reagents

Cat. No. 100583	Tungstophosphoric acid hydrate for analysis EMSURE®	100 g, 250 g
Cat. No. 100974	Ethanol denatured with about 1 % methyl ethyl ketone for analysis EMSURE®	1 l, 2.5 l
Cat. No. 103699	Immersion oil acc. to ISO 8036 for microscopy	100-ml dropping bottle
Cat. No. 104699	Immersion oil for microscopy	100-ml dropping bottle, 100 ml, 500 ml
Cat. No. 105231	Fuchsin acid (C.I. 42685) for microscopy Certistain®	25 g
Cat. No. 107961	Entellan® new rapid mounting medium for microscopy	100 ml, 500 ml, 1 l
Cat. No. 108298	Xylene (isomeric mixture) for histology	4 l
Cat. No. 109016	Neo-Mount® anhydrous mounting medium for microscopy	100-ml dropping bottle, 500 ml
Cat. No. 109843	Neo-Clear® (xylene substitute) for microscopy	5 l
Cat. No. 115925	Orange G (C.I. 16230) for microscopy Certistain®	25 g

Hazard classification

Cat. No. 116316
Please observe the hazard classification printed on the label and the information given in the safety data sheet.
The safety data sheet is available on the website and on request.

Main components of the product

Cat. No. 116316
C.I. 42780
 $C_{37}H_{27}N_3Na_2O_9S_3$
M = 799.81 g/mol

Other IVD products

Cat. No. 100496	Formaldehyde solution 4%, buffered, pH 6.9 (approx. 10% Formalin solution) for histology	350 ml and 700 ml (in bottle with wide neck), 5 l, 10 l, 10 l Titripac®
Cat. No. 105174	Hematoxylin solution modified acc. to Gill III for microscopy	500 ml, 1 l, 2.5 l
Cat. No. 109204	Giemsa's azur eosin methylene blue solution for microscopy	100 ml, 500 ml, 1 l, 2.5 l
Cat. No. 115974	Elastica van Gieson staining kit for connective tissue	4x 500 ml
Cat. No. 117081	Eosin Y solution 1%, alcoholic for microscopy	1 l

Literature

1. Romeis - Mikroskopische Technik, Editors: Mulisch, Maria, Welsch, Ulrich, 2015, Springer-Verlag Berlin Heidelberg
2. Theory and Practice of Histological Techniques, John D Bancroft and Marilyn Gamble, 6th Edition
3. Conn's Biological Stains: A Handbook of Dyes, Stains and Fluorochromes for Use in Biology and Medicine, 10th Edition, (ed. Horobin, R.W. and Kiernan, J.A). Bios, 2002



Consult instructions for use



Manufacturer



Catalog number



Batch code



Caution, consult accompanying documents



Use by YYYY-MM-DD



Temperature limitation

Status: 2019-09-20

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