

1.15930.0025

Microscopy

Toluidine blue (C.I. 52040)

for microscopy Certistain®

IVD	In Vitro Diagnostic Medical Device
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for staining nuclei and for visualization of metachromasia in histological sections

This staining dye "Toluidine blue O (C.I. 52040) - for microscopy Certistain®" 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 evaluable for diagnostic purposes (by fixing, embedding where necessary, staining with the above toluidine blue O solution, counterstaining, mounting) in histological specimen materials.

Principle

Toluidine blue O belongs to the thiazine dyes that are especially suited for nuclear staining of histological material.

Toluidine blue O can be used for the demonstration of metachromasia, which is typical of very dense structures (spaced less than 0.4 nm) of negative valences in tissue.

Demonstration is possible with diluted staining solutions containing monomers of dye only, which bind to the single bond of negative valences. Metachromatic staining is typical of mucosubstances, particularly sulfated mucopolysaccharides, cartilage, cylindrical cells and mast cell granules.

Sample material

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

Reagents

Cat. No. 1.15930.0025

Toluidine blue O (C.I. 52040) 25 g
for microscopy Certistain®

Color Index No.: 52040

Color Index Name: Basic blue 17

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

Toluidine blue O solution 0.1 %

For preparation of approx. 100 ml solution mix:

Toluidine blue O (C.I. 52040) Certistain®	0.1 g
Distilled water	100 ml
dissolve and filter	

The freshly prepared staining solution should be filtered before use.

Procedure - Nuclear staining / Overview 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
Toluidine blue O solution 0.1 %	10 - 20 min
Distilled water	1 min
Mount with glycerol	
or for permanent slides:	
Ethanol 95 %	1 min
Ethanol 95 %	1 min
Ethanol 100 %	1 min
Ethanol 100 %	1 min
Xylene	1 min
Xylene	1 min
Mount the xylene-wet slides with e.g. Entellan® new and cover glass.	

After dehydration (ascending alcohol series) and clearing with xylene, histological samples can be mounted with water-free mounting agents (e.g. DPX new or Entellan® new) 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	dark blue
Tissue	blue

Procedure - Metachromasia

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
Toluidine blue O solution 0.1 % ¹⁾	1 - 2 min
Distilled water	1 min
Mount with glycerol and cover glass (seal with colorless nail polish)	
or for permanent slides:	
Ethanol 95 %	1 min
Ethanol 95 %	1 min
Ethanol 100 %	1 min
Ethanol 100 %	1 min
Xylene	1 min
Xylene	1 min
Mount the xylene-wet slides with e.g. Entellan® new and cover glass.	

¹⁾ or: Toluidine blue O solution **0.01 %** 5 - 10 min

After dehydration (ascending alcohol series) and clearing with xylene, histological samples can be mounted with water-free mounting agents (e.g. DPX new or Entellan® new) 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 and cytoplasm	orthochromatic - blue
Various acid carbohydrates*	metachromatic - pink to red or violet

* Metachromatic are connective tissue, mucins, basic substances of cartilage, mast cell granules, many epithelial mucins.

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 solution 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 Toluidine blue O (C.I. 52040) - for microscopy Certistain® at +5 °C to +30 °C.

Shelf-life

Toluidine blue O (C.I. 52040) - for microscopy Certistain® 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. 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 drop-ping bottle
Cat. No. 104095	Glycerol for fluorescence microscopy	250 ml
Cat. No. 104699	Immersion oil for microscopy	100-ml drop-ping bottle, 100 ml, 500 ml
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

Hazard classification

Cat. No. 1.15930.0025

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. 1.15930.0025

C.I. 52040

C₁₅H₁₆ClN₃S

M = 305,84 g/mol

Other IVD products

Cat. No. 100362	Silver plating kit acc. to von Kossa for the detection of microcalcification	1 set
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. 105175	Hematoxylin solution modified acc. to Gill II for microscopy	500 ml, 2.5 l
Cat. No. 115161	Histosec® pastilles (without DMSO) solidification point 56-58°C embedding agent for histology	10 kg (4x 2.5 kg), 25 kg
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: 2019-08-12

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