2C-181

Methylene blue solution, Ziehl-Neelsen
In-vitro diagnostic agent

Description

The product 2C-181 is a ready-to-use solution for professional users for application in histology. It is an aqueous dye solution. The product comes in 4 different pack sizes: 2C-181.00100 (100ml bottle), 2C-181.00250 (250ml bottle), 2C-181.01000 (1l bottle), 2C-181.10000(10l canister).

Main components

Methylene blue (CI: 52015)	2.5g/L
Ethanol (CAS 64-17-5)	25%

Purpose

The "Methylene blue solution, according to Ziehl-Neelsen" is used for cell diagnostics for the examination of microbacteria and as a vital dye for the selective staining of protein-containing structures (cell nuclei, microorganisms). It is a ready-to-use dye solution for professional users, often used in combination with the carbol-fuchsin solution in Ziehl-Neelsen staining. It can be used for cold staining of microscopic specimens in microbiology to distinguish acid-fast bacteria from other non-acid-fast bacteria by staining.

Sample material and sample preparation

Sampling may only be carried out by qualified personnel. All samples must be processed with state-of-the-art technology. All samples must be clearly labelled.

Sample material: Smear specimens after air drying, heat fixation and pre-treatment with Sputoflol®, such as sputum, smears from fine needle aspiration biopsies, rinsing fluids, imprints, pus, exudates, effusions after air drying, heat fixation and pre-treatment with Sputoflol®.

Test principle

The principle of staining using methylene blue solution is based on the attachment (polar bonding) of positively charged methylene blue molecules to the negatively charged structures in the tissue. The dye solution makes cell nuclei, chromatin structures and nucleoli clearly visible.

Staining

Before staining, deparaffinise the sections and transfer them to distilled water via a descending ethanol series. After being stained with methylene blue solution, the samples are rinsed under running water and then washed with ammonium molybdate (5%). The samples are again rinsed with water and transferred to distilled water before being transferred to xylene via an ascending ethanol series. The samples can be covered with a synthetic covering medium for subsequent examination under a microscope.

Waldeck GmbH & Co. KG
Havixbecker Str. 62
48161 Münster
Deutschland
Amtsgericht Münster
HRA 1926

Komplementärin:
Wahlig Beteiligungs- und
Verwaltungsgesellschaft mbH
Amtsgericht Münster
HRB 692

Geschäftsführer:
Wilhelm Wahlig
Ingo Gerdes

Bankverbindungen:
SPK Westmünsterland
IBAN:
DE49401545300036060184
BIC:
WELADE3WXXX

USt.-Id.-Nr.:
DE126046718
Steuer-Nr.:
5336/5779/0252
Gläubiger-ID:
DE67ZZZ00000021849

Kontakt:
Tel. +49 2534 970 0
Fax +49 2534 970 258
info@waldeck-ms.de
www.waldeck-ms.de

To ensure the differentiability of the target structures, suitable control specimens should be kept along with the staining.

The usual staining protocols known from literature must be used.
Staining may only be carried out by qualified personnel.

Result

Cell nuclei	dark blue
Cytosol	different shades of blue

Precautionary measures

When removing the product, care must be taken to avoid contamination of the storage vessel. Once the solution has been removed, it must not be returned to the canister. If turbidity or solids appear, discard the product. The product is intended for single use and must not be reused.

Storage and shelf life

Store the unopened containers in a dry place at 15 to 25 °C, avoiding direct sunlight.
The shelf life is 2 years. See also the best-before date (BBD) on the label. Once the containers have been opened, the shelf life corresponds to the best-before date, as long as the storage conditions are observed and the solution is handled properly.

Safety notice

If any serious incidents occur in connection with the product, please report them to the manufacturer and the national authority.

Literature

Romeis, Mikroskopische Technik, Editors: Maria Mulisch, Ulrich Welsch, 2010, Springer Spektrum, 18th edition

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