1B-519
Brilliant cresyl blue Subst.

In-vitro diagnostic agent

Description

The product is a dye for use in human medical cell diagnostics. It is a dry dye for preparing a staining solution for professional users.

The product comes in 5 different pack sizes: 1B-519.00010 (10g bottle), 1B- 519.00025 (25g bottle), 1B-519.00100 (100g bottle), 1B-519.01000 (1kg bucket), 1B-519.02000 (2kg bucket).

Main components

Toluidine blue (CI 52040)	73%
Nile blue sulphate (CI 51180)	27%

Purpose

The "brilliant cresyl blue" solution is used for cell diagnostics for the haematological examination of samples of human origin. The brilliant cresyl blue stock solution should be diluted with isotonic saline in a ratio of 1:80 to 1:200 before use. It is a dye solution for professional users. It can be used for staining reticulocytes in the blood.

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: Unfixed samples of human origin of anticoagulated venous blood or, in exceptional cases, capillary blood.

Test principle

To prepare the brilliant cresyl blue solution, dissolve 1g of the dye brilliant cresyl blue Subst in 100ml of isotonic saline solution.

Reticulocyte counting can be used to determine the regeneration capacity of the erythrocytes. The ribonucleoproteins (substantia granulo-filamentosa) can be determined with fresh, non-fixed young erythrocytes by supravitral staining. Depending on the developmental state of the reticulocytes, four forms of maturation of the substantia granulo-filamentosa can be distinguished: Tangle shape (I); incomplete net shape (II), complete net shape (III) and granule shape (IV). In the peripheral blood, usually only developmental stages III and IV are found. The brilliant cresyl blue solution stains the reticulocytes into a black-blue network and a black-blue stippling.

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Komplementärin:
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Staining

For a single examination, 20 µl of blood are taken up with 20 µl of brilliant cresyl blue solution by means of a haemoglobin pipette and poured into a sealable vessel. After thorough mixing, a thin smear specimen can be prepared after about 30 minutes.

For a serial examination, the brilliant cresyl blue solution is spread in a thin layer on the slide using a glass rod. These prepared and air-dried slides can be kept for 2 to 3 weeks. For the subsequent reticulocyte count, a small drop of blood is quickly spread over the colour layer and the still moist specimen is immediately placed in a moist chamber (e.g. Petri dish with moist filter paper) for 5 to 10 minutes. The specimens are then air-dried.

The counting is done under the microscope. The reticulocytes are counted on every 1000 erythrocytes under the microscope in serpentine paths with oil immersion. Inserted, subdivided reticulocyte counting nets in one of the two eyepieces help and simplify counting.

For the calculation of the number of reticulocytes (cells/µl) the following

applies: (Erythrocyte count/µl x Reticulocyte count (‰)) / 1000

The normal range in adults is 5 to 15‰ and a reticulocyte count/µl of 25000 to 75000. In children, the normal range is 20 to 60‰ and a reticulocyte count/µl of 100000 to 300000.

Result

Reticulocytes	black-blue network and black-blue stippling

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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