2E-064

Colour solution EA 50, Papanicolaou
In-vitro diagnostic agent

Description

The product 2E-064 is a ready-to-use solution for professional users in histology and cytology. It is an aqueous polychrome solution with eosin, light green SF and bismarck brown. The product comes in 6 different pack sizes: 2E-064.00100 (100ml bottle), 2E-064.00250 (250ml bottle), 2E-064.01000 (1l bottle), 2E-064.02500 (2.5l canister), 2E-064.05000 (5l canister) and 2E- 064.10000 (10l canister).

Main components

Ethanol (CAS no.: 64-17-5)	600 ml
Methanol (CAS no.: 67-56-1)	400 ml
Light green yellowish (C.I.: 42095)	2.2g/l
Eosin G (C.I.: 45380)	2.2g/l
Phosphotungstic acid (CAS no. 12501-23-4)	2.0g/l
Lithium carbonate (CAS no.: 554-13-2)	0.01g/l
Bismarck brown R (C.I.: 21010)	0.5g/l

Purpose

The staining solution "Papanicolaou's solution 3b" is used in combination with Papanicolaou's solution 1a Harris and Papanicolaou's solution 2a Orange G in the Papanicolaou's staining (PAP staining). Staining is used in gynaecological cell diagnostics to examine histological samples (e.g. smear specimens) and is used for the early detection of tumours. At the same time, cytological evidence is possible with the staining method. The dye solution is intended for professional users.

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: Blood and smear specimens of human tissue after fixation, for instance by means of buffered formol and fixation mixtures with ethanol and formalin and subsequent embedding in paraffin.

Test principle

First, the nucleus is stained with Papanicolaou's solution 1a Harris, followed by cytoplasmic staining with Papanicolaou's solution 2a Orange G, causing the keratinised and mature squamous cells to appear in red-orange. Then the staining is done with Papanicolaou's solution 3b. The different size of the dye molecules and the different nature of the cytoplasm allows the squamous epithelium to be differentiated into mature or immature cells.

Staining

Before staining, deparaffinise the sections and transfer them to distilled water via a descending ethanol series. The colouring can be progressive or regressive. In progressive staining, after staining with Papaninolaou's solution 1a, the excess colour of the samples is washed out by rinsing them in tap water and transferring them to ethanol. Subsequently, the staining is done with Papanicolaou's solution 2a, after which the samples are rinsed again in ethanol before being stained with Papanicolaou's solution 3b.

In regressive staining, the samples are first stained with Papanicolaou's solution 1a and differentiated by subsequent rinsing in hydrochloric acid solution (0.25%), washed under running tap water, into ethanol and stained with Papanicolaou's solution 2b. After transfer to ethanol, the staining is carried out using

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Papanicolaou's solution 3b.
The samples are then transferred to xylene via an ascending ethanol series. The samples can be covered with a synthetic covering medium for subsequent examination under a microscope.
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	blue, dark purple
Cytoplasm	blue-green
Keratinised	red-orange
Erythrocytes	red
Bacteria	grey-blue
Trichomonads	grey-green

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