3E-144

Schiff`s reagent, modified according to Graumann

In-vitro diagnostic agent

Description

The product 3E-144 is a ready-to-use solution for professional users in histology. The product comes in 6 different pack sizes: 3E-144.00100 (100ml bottle) 3E-144.00250 (250ml bottle), 3E-144.00500 (500ml bottle) and 3E-144.01000 (1l bottle)

Main components

Fuchsin basic (C.I. 42500)	5.0 g/l
Potassium disulphite (CAS no. 16731-55-8)	6.7 g/l

Purpose

The Periodic Acid-Schiff (PAS) reaction is a chemical method for the detection of aldehyde and mucosubstances. Schiff`s reagent, modified according to Gaumann" is used for cell diagnostics for the examination of histological samples (e.g. histological sections) of human origin. Schiff`s reagent can be used for staining mucopolysaccharides in histological tissues.

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: Sections of human tissue (3–4 μm thickness) after fixation, for instance by means of buffered formol and fixation mixtures with ethanol and formalin and subsequent embedding in paraffin or fresh, native blood or bone marrow smears.

Test principle

In the PAS reaction, the sample is first treated with periodic acid, whereby 1,2-glycols oxidise to aldehyde groups. The addition of Schiff`s reagent (fuchsin sulphurous acid) stains the aldehydes bright red. The PAS reaction results in a specific colour reaction with unsubstituted polysaccharides, neutral mucopolysaccharides, muco- and glycoproteins and glyco- and phospholipids.

Staining

Before PAS staining, the sections must be deparaffinised and rehydrated via a descending ethanol series. The specimens are first rinsed in distilled water, transferred to periodic acid solution (0.5%) and washed under running tap water. After rinsing in distilled water, stain with Schiff's reagent. Subsequently, the samples are again soaked under running tap water and transferred to distilled water. The use of haematoxylin solution is recommended for a higher-contrast visualisation of the PAS-positive structures. The samples are then dehydrated over an ascending ethanol series and transferred to xylene.

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

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Result

Cell nuclei	blue
Polysaccharides, glycogen, neutral mucopolysaccharides, mucoproteins and glycoproteins, glyco- and phospholipids, basement membrane, collagen	purple

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. After opening, the container should be stored in a cool place at 2–8 °C. The shelf life is then a maximum of 4 weeks.

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