1.24546.0250

Microscopy

Fluorescein-5-isothiocyanate (FITC)

for biochemistry and for fluorescence microscopy

IVD In Vitro Diagnostic Medical Device CE

for the labeling of proteins

This staining dye “Fluorescein-5-isothiocyanate (FITC) - for biochemistry and for fluorescence microscopy” is used for human-medical cell diagnosis and serves the purpose of the cytological 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 in cytological specimen materials evaluable for diagnostic purposes.

Principle

Fluorescein-5-isothiocyanate (FITC) is a fluorescence dye and belongs to the xanthene dyes.

FITC is used for labeling of different biomolecules, e.g. immunoglobulins, lectins and other proteins, peptides, nucleic acids, nucleotides; oligo-and polysaccharides.
Such labeled products are used as reagents for affinity, immuno and in-situ hybridisation staining of sections, for living cells, and as stains for flow cytometric procedures.
Tissue sections and cell monolayers may be stained in various ways with FITC.

Sample material

Cell suspensions (protein solutions)

Reagents

Cat. No. 1.24546.0250

Fluorescein-5-isothiocyanate (FITC) 250 mg
for biochemistry and for fluorescence microscopy

Color Index No.: -
Color Index Name: -

Absorption maximum 490 nm

Emission maximum 520 nm

Also required:

Cat. No.	106345	Sodium dihydrogen phosphate dihydrate geeigent für die Verwendung als Excipient EMPROVE® exp Ph Eur,BP,USP,JPE,E 339	1 kg, 5 kg
Cat. No.	106404	Sodium chloride for analysis EMSURE® ACS,ISO,Reag. Ph Eur	500 g, 1 kg, 5 kg
Cat. No.	106578	tri-Sodium phosphate dodecahydrate for analysis EMSURE® ACS,Reag. pH Eur	1 kg, 5 kg
Cat. No.	106580	di-Sodium hydrogen phosphate dihydrate for analysis EMSURE®	500 g, 1 kg

Sample prepration

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.

Reagent preparation

Phosphate buffered sodium chloride solution (PBS)

NaCl 0.145 M / phosphate 0.01 M - pH 7.1 - 7.2

For preparation of approx. 1 l solution mix:

Sodium chloride	8.5 g
di-Sodium hydrogen phosphate dihydrate (Na_2HPO_4 x 2 H_2O)	1.07 g
Sodium dihydrogen phosphate dihydrate (NaH_2PO_4 x 2 H_2O)	0.39 g
Distilled water	1 l
dissolve	

di-Sodium hydrogen phosphate solution 0.1 M

For preparation of approx. 100 ml solution mix:

di-Sodium hydrogen phosphate dihydrate (Na_2HPO_4 x 2 H_2O)	1.78 g
Distilled water	100 ml
dissolve	

di-Sodium hydrogen phosphate solution 0.2 M

For preparation of approx. 100 ml solution mix:

di-Sodium hydrogen phosphate dihydrate (Na_2HPO_4 x 2 H_2O)	3.56 g
Distilled water	100 ml
dissolve	

tri-Sodium phosphate solution 0.1 M

For preparation of approx. 100 ml solution mix:

tri-Sodium phosphate dodecahydrate (Na_3PO_4 x 12 H_2O)	3.80 g
Distilled water	100 ml
dissolve	

Sodium chloride solution 0.145 M

For preparation of approx. 100 ml solution mix:

Sodium chloride	0.847 g
Distilled water	100 ml
dissolve	

Procedure

Store the following solutions in the water bath at 25 °C

Protein solution (**4 ml, 2 %**)
di-Sodium hydrogen phosphate solution 0.1 M
di-Sodium hydrogen phosphate solution 0.2 M
tri-Sodium phosphate solution 0.1 M
Sodium chloride solution 0.145 M

FITC solution

Fluorescein-5-isothiocyanate (FITC)	1 mg*
di-Sodium hydrogen phosphate solution 0.1 M	2 ml
dissolve under stirring within 5 - 10 min and stored in the water bath at 25 °C	

* used volume is dependent on the fluorochrome/ protein ratio

Labelling with FITC

di-Sodium hydrogen phosphate solution 0.2 M	1 ml
Protein solution, 2 %	4 ml
mix in Erlenmeyer flask with stopper	
FITC solution	2 ml
add	
measure the pH value **immediately** and bring to **pH 9.5** by adding a few drops of **tri-Sodium phosphate solution 0.1 M**	
Sodium chloride solution 0.145 M	make up to 8 ml
close the vessel, shake vigorously and store in the water bath protect from light	
after 30 min cool in an ice bath under shaking	
gel chromatography on Sephadex G25 follows to remove the unbound dye	

Result

Fluorescence yellow-green

Application notes

pH value should be 9.0 to 9.5 within the labeling.

Protein content should be 10 - 40 mg proteins (1 - 4 %).

Used FITC volume is dependent on the fluorochrome/ protein ratio

Reaction time is dependent on the temperature: 30 - 60 min at 25 °C; 12 h at 4 °C.

Precipitates occuring during the reaction, should be removed by centrifugation (20 min at 2200 g).

Technical notes

The microscope used should meet the requirements of a medical diagnostic laboratory.

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 Fluorescein-5-isothiocyanate (FITC) - for biochemistry and for fluorescence microscopy at +2 °C to +8 °C.

Shelf-life

Fluorescein-5-isothiocyanate (FITC) - for biochemistry and for fluorescence microscopy 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 +2 °C to +8 °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.
If necessary use a standard centrifuge suitable for medical diagnostic laboratory.

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.	106345	Sodium dihydrogen phosphate dihydrate suitable for use as excipient EMPROVE® exp Ph Eur,BP,USP,JPE,E 339	1 kg, 5 kg
Cat. No.	106404	Sodium chloride for analysis EMSURE® ACS,ISO,Reag. Ph Eur	500 g, 1 kg, 5 kg
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Cat. No.	106580	di-Sodium hydrogen phosphate dihydrate for analysis EMSURE®	500 g, 1 kg

Hazard classification

Cat. No. 1.24546.0250

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. 1.24546.0250

$C_{21}H_{11}NO_5S$

M = 389.39 g/mol

Other IVD products

Cat. No.	124653	4’,6-Diamidino-2-phenylindole dihydrochloride (DAPI) for microscopy	100 mg
Cat. No.	124823	Nitro blue tetrazolium chloride (NBT) for microscopy	500 mg

Literature

1. Routine Cytological Staining Techniques: Theoretical Background and Practice, Mathilde E. Boon, Johanna S. Drijver, 1986, Elsevier Science Publishing Company
2. 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: 2017-09-29

Merck KGaA, 64271 Darmstadt, Germany
Tel. +49(0)6151 72-2440
www.microscopy-products.com

EMD Millipore Corporation, 290 Concord Road, Billerica, MA 01821, USA, Tel. +1-978-715-4321