

Kit Fluo-RAL

REF. 359000-0000

Acid fast bacilli differential fluorescent staining



IFU065A-RAL

For professional use only.

Please read all information carefully before using this device.

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Intended Use

Kit Fluo-RAL is intended to be used for acid fast bacilli differential fluorescent staining prior microscopic examination.

If applicable, RAL Diagnostics recommends using the associated RAL Diagnostics products and cannot guarantee that the expected results will be achieved if used in combination with products of other brands.

Principle

Kit Fluo-RAL allows a quick fluorescence detection of mycobacteria or Acid Fast Bacilli (AFB). The characteristic structure of the mycobacteria walls hampers discoloring agent penetration. This property allows AFB to keep auramine staining after discoloring with acid and alcohol. Other bacteria (non-AFB) and cell elements are counterstained by Thiazine Red.

Kit description

Fixative Fluo-RAL

Clear colorless solution
REF. 362115-0250 1 X 250 mL

Auramine Fluo-RAL

Cloudy yellow solution
REF. 362325-0125 1 X 125 mL

Carbolic Solution for Auramine Fluo-RAL

Clear colorless solution
REF. 362530-0125 1 X 125 mL

Degommier Discolouring Solution Fluo-RAL

Clear colorless solution
REF. 362210-0250 1 X 250 mL

Thiazine Red Fluo-RAL

Clear red solution
REF. 362780-0125 1 X 125 mL

Carbolic Solution for Thiazine Red Fluo-RAL

Clear colorless solution
REF. 362610-0125 1 X 125 mL

For a specific batch, refer to the analysis certificate of the batch available at my.ral-diagnostics.fr.

Storage

Storage temperature: 15-25°C away from light.
Bottle shelf life before and after opening: refer to the expiry date on the label.



Active components

Fixative Fluo-RAL

Trichloroacetic acid -CAS- 76-03-9: ≤ 1%

Auramine Fluo-RAL

Ethanol -CAS- 64-17-5: < 10%
Auramine O -CAS- 2465-27-2: < 1%
Phenol -CAS- 108-95-2: < 3%

Carbolic Solution for Auramine Fluo-RAL

Phenol -CAS- 108-95-2: < 10%

Degommier Discolouring Solution Fluo-RAL

Ethanol -CAS- 64-17-5: ≤ 95 %
Hydrochloric acid, 37% -CAS- 7647-01-0: < 1%

Thiazine Red Fluo-RAL

Thiazine red -CAS- 2150-33-6: < 1%
Sodium carbonate -CAS- 497-19-8: < 1%

Carbolic Solution for Thiazine Red Fluo-RAL

Phenol -CAS- 108-95-2: < 1%

Hazard classification and safety information

Fixative Fluo-RAL

Danger: H314 - Causes severe skin burns and eye damage. H412 - Harmful to aquatic life with long lasting effects.

P280 - Wear protective clothing, protective gloves, eye protection. P301+P330+P331+P310 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor. P303+P361+P353+P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor. P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.



Auramine Fluo-RAL

Warning: H226 - Flammable liquid and vapour.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.



Carbolic Solution for Auramine Fluo-RAL

Danger: H302 - Harmful if swallowed. H314 - Causes severe skin burns and eye damage. H341 - Suspected of causing genetic defects.



P201 - Obtain special instructions before use. P264 - Wash hands thoroughly after handling. P280 - Wear protective gloves, protective clothing, eye protection, face protection. P301+P330+P331+P310 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor. P303+P361+P353+P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor. P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

CONT C6H5OH

Degommier Discolouring Solution Fluo-RAL

Danger: H225 - Highly flammable liquid and vapour. H314 - Causes severe skin burns and eye damage.



P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P280 - Wear protective gloves, protective clothing, eye protection. P301+P330+P331+P310 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor. P303+P361+P353+P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor. P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Thiazine Red Fluo-RAL

No labelling applicable

Carbolic Solution for Thiazine Red Fluo-RAL

No labelling applicable

Personnel qualification

All samples and products must be handled by qualified and authorized personnel, using individual or collective protection, in accordance with the national directives in force in the laboratories. Personnel must also be aware of the classification of hazardous materials indicated on the label and the safety data sheet (available at my.ral-diagnostics.fr).

The specimen must be treated in accordance with procedures available in the laboratory and required by national authorities.

The diagnosis must be conducted by qualified and authorized personnel, in accordance with the procedures in force within the laboratory.

Specific equipment and reagents required but not provided

Microscope slides, Fluorescence microscope with FITC filter Set (Auramine: Ex. 430 nm/Em. 510 nm, Thiazine Red: Ex. 510 nm/ Em. 600 nm) and this following RAL Diagnostics devices:
SUREFIX REF: 336000-0050

This equipment may vary depending on the protocol. Please refer to the relevant protocol (see the section operating procedure) to ensure that you have the necessary equipment to carry out tests.

Operating procedure

The equipment used for sample processing must comply with the supplier's instructions for use.

Sample preparation

Pre-treatment of sample from liquid culture media: Take around 300 to 400 µL of liquid culture medium (including a few beads if possible) and pour it into an microtube. Centrifuge for 1 min at 10 000 rpm and discard supernatant. Then add 2 to 3 drops of physiological saline to the microtube and vortex or stir with a loop. The sample is now ready to be smeared.

Manual bacterial smear: made a thin film of bacteria sample and leave the slide to dry at room temperature. Then bacterial smear can be fixed with mild heat source (Bunsen burner or hot plate) or chemically fixed with chemical fixative (methanol, ethanol, acetic acid, or formalin...)

NB: Never pass through the flame a smear that is not entirely dry, this could cause cracklings and dissemination of bacteria (creation of aerosols).

If necessary, the two fixations can be combined.

Manual bacterial smear from liquid or solid culture: Apply a drop of SUREFIX on a slide and with a loop place on top of the SUREFIX drop, the preparation from a liquid culture (as described above) or a colony from a solid culture. Mix SUREFIX drop and the sample and made a uniform smear layer. Eventually Leave the smear to air dry before placing the slide on a hot plate for 30 min at a temperature of 80 °C.

Reagents and instruments preparation

Fixative Fluo-RAL and Degommier Discolouring Solution Fluo-RAL are ready to use.

Prepare Auramine solution by mixing equal quantities of Carbolic Solution for Auramine Fluo-RAL and Auramine Fluo-RAL.

Prepare Thiazine Red solution by mixing equal quantities of Carbolic Solution for Thiazine Red Fluo-RAL and Thiazine Red Fluo-RAL.

Protocols

The staining steps of the protocols indicated below consist of a successive covering of the slides with the different staining reagents. Place slide on a stand with fixed smear on top.

Standard protocol for bacterial smear staining- manual covering method - Manual microscopic analysis

Processing time: 32 min

Steps	Reagent	Time [mm: ss]	Indications
Fix	Fixative Fluo-RAL	05:00	No
Rinse	Distilled water	01: 00	
Stain	Auramine solution	15: 00	
Rinse	Distilled water	01: 00	
Discolor	Degommier Discolouring Solution Fluo-RAL	03: 00	
Rinse	Distilled water	01: 00	
Stain	Thiazine Red solution	05: 00	
Rinse	Distilled water	01: 00	
Dry	No	≥03:00	Keep away from light

Short protocol for bacterial smear staining – manual covering method - Manual microscopic analysis

Processing time: 18 min 30 sec

Steps	Reagent	Time [mm: ss]	Indications
Fix	Fixative Fluo-RAL	03:00	No
Rinse	Distilled water	01: 00	
Stain	Auramine solution	10: 00	
Rinse	Distilled water	01: 00	
Discolor	Degommier Discolouring Solution Fluo-RAL	00: 30	
Rinse	Distilled water	01: 00	
Stain	Thiazine Red solution	01: 00	
Rinse	Distilled water	01: 00	
Dry	No	≥03:00	Keep away from light

Quick protocol for bacterial smear staining – manual covering method - Manual microscopic analysis

Processing time: 04 min 30 sec

Steps	Reagent	Time [mm: ss]	Indications
Fix	Fixative Fluo-RAL	01: 00	No
Rinse	Distilled water	No	
Stain	Auramine solution	01: 00	
Rinse	Distilled water	No	
Discolor	Degommier Discolouring Solution Fluo-RAL	00: 30	
Rinse	Distilled water	No	
Stain	Thiazine Red solution	01: 00	
Rinse	Distilled water	No	
Dry	No	≥03:00	Keep away from light

Expected results

Bacterial smear

A.F.B: fluorescent green yellow

Background of the preparation: red

If observed results vary from those expected, please contact RAL Diagnostics technical service through your usual supplier for assistance.

Performance

This medical device is state of the art. Its analytical performance, scientific validity and medical relevance are assessed in the CE marking review.

To ensure product performance, use clean and dry laboratory equipment.

The laboratory is responsible for notifying the manufacturer and state competent authority of any serious incident relating to the use of the medical device.

User quality Control

Users are responsible for determining the appropriate quality control procedures for their laboratory and complying with applicable laboratory regulations.

RAL Diagnostics recommend using a positive smear and a negative smear from different patient samples at reagents renewal and for the first staining cycle of each day. Slides stained for quality control purposes should be checked to ensure that they are satisfactory for intended test (properly stained and free of precipitate).

Slides can be prepared in advance and heat-fixed appropriately for storage.

This control could be done using a positive patient sample or a dilute suspension of AFB recognized positive (such as *Mycobacterium abscessus* CIP 108541).

Staining results for each cell type must also be compliant with this manual expected results

These quality control procedures should only be performed by qualified personnel.

Other products

For more information contact your usual supplier.

Recommendations, notes, and troubleshooting

Products appearance

If the appearance of the products differs from the description above, do not use it and contact RAL Diagnostics technical service through your usual supplier for assistance.

Procedures notes

To prevent products degradation, please comply with the storage and handling recommendations specified in this manual.

It is necessary to perform a preliminary fixation of the bacterial smear.

Auramine Fluo-RAL is normally turbid. It is advised to renew the solutions in the staining compartment once a week at least.

Auramine and Thiazine Red solutions can be kept one week after reconstitution. Air dry away from light.

The microscopic examination is usually performed with x20 and x40 dry objectives and without any cover-glass. Each time fluorescent organisms are observed, it is necessary to confirm the presence of Acid Fast Bacilli (AFB) by staining the slide anew with one Ziehl cold or hot staining technique (Kit RAL ZN staining or kit Cold ZN).

Products stability

Every RAL Diagnostics product can be used until the expiry date indicated on, in its original packaging if it is still hermetically sealed.

Staining stability

Staining quality and reproducibility depend on the correct use of the products.

Instructions for cleaning and waste disposal

All biological samples, effluents and used consumables should be considered potentially hazardous.



To avoid any risk, apply the following instructions: dispose of samples, effluents and consumables in accordance with laboratory standards and applicable national and local standards and regulations.

Chemical and biological waste must be collected and processed by specialized, registered companies.

Table of symbols and abbreviations

Depending on the product, you may find the following symbols on the device or the packaging material.

GHS PICTOGRAMS	INTERPRETATION	SYMBOL	INTERPRETATION
	Explosive		Batch code
	Flammable		Serial number
	Oxidizer		Catalogue reference
	Compressed gas		Date of manufacture
	Corrosive		Use up to
	Toxic		Unique device identifier
	Harmful		Manufacturer
	Health Hazard		Importer
	Environmental Hazard		Entity distributing the medical advice in the region concerned
	No labelling applicable		CE marking device
			In vitro diagnostic medical device
			Authorized Representative in the European Community
			Authorized Representative in Switzerland
			Complies with UK guidelines
			Do not use if packaging is damaged
			Keep away from light
			Temperature limit: 15-25°C
			Temperature limit: 15-30°C
			Keep dry
			Box: handling upwards
			Fragile
			Sterilised by irradiation
			Single sterile barrier system with outer protective packaging
			Sterile and radiation-sterilised barrier suit
			Do not reuse
			Do not re-sterilize
			Contents sufficient for n tests
			Hazardous material contained
			Consult instructions for use
			Use
			After opening, use within XX months
			The product must not be used in conjunction with an automatic colouring machine
			Indicates a medical device that contains potentially carcinogenic, mutagenic or reprotoxic (CMR) substances, or substances classified as endocrine disruptors

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Procedure modified by Medical Biology Laboratory, HIA Percy in Clamart - France (C.Soler, M.Favre).

Change tracking

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