Field's Stains A & B

(for *In Vitro* Diagnostic use only)

PRODUCT CODE: PL.7123, PL.7124, PL.7125, PL.7126

INTENDED USE

For the rapid detection of *Plasmodium* species in the diagnosis of malaria in prepared blood films from clinical specimens.

SUMMARY AND EXPLANATION

Field's staining was developed in 1941 by John William Field, and is used to detect *Plasmodium* trophozoites through staining of blood smears. The definitive diagnosis of malaria infection and other parasites is still fundamentally based on finding trophozoites in blood films.

PRINCIPLE OF THE TEST

In thin blood films the cells must first be fixed on the slide. This preserves structures within the single layer of cells and allows detection of parasites / infected cells by morphology.
Thick films do not require fixation prior to staining, as the cells become 'locked' in place and are too dense to be examined under a microscope. Instead, the aqueous staining technique lyses the red blood cells, leaving a thinner layer of white blood cells and parasites that may be present for analysis. Caution must be taken when handling thick films, as the stains do not kill parasites, viruses or other pathogens which may be present in the sample.
Thick and thin films, therefore, have different purposes: thin films are useful to indicate the presence of parasites and show cellular structures in detail, while thick films tend to give a better indication of the concentration of parasites.

MATERIALS PROVIDED

-	PL.7123	Field's Stain A	500 ml
-	PL.7124	Field's Stain A	1000 ml
-	PL.7125	Field's Stain B	500 ml
-	PL.7126	Field's Stain B	1000 ml

Per 100ml solution:

- Field's Stain A contains 2.5g of Field's Stain A powder.
- Field's Stain B contains 2.5g of Field's Stain B powder and 0.01g of Thymol.

MATERIALS REQUIRED BUT NOT PROVIDED

- Methanol
- Buffered water, pH 7.2
- Glass slides
- Inoculating loop
- Microscope
- Immersion Oil PL.396

STABILITY AND STORAGE

Field's Stains A and B should be stored at 15-25ºC in their original containers. Product stored under these conditions will be stable until the expiry date shown on the product label.

PRECAUTIONS

- For *In Vitro* Diagnostic Use only.
- For professional use only.
- Directions should be read and followed carefully.
- Do not use beyond the stated expiration dates.
- Microbial contamination may decrease the accuracy of the staining.
- Safety precautions should be taken in handling, processing and discarding all clinical specimens.
- Caution must be taken when handling thick films, as the stains do not kill parasites, viruses or other pathogens which may be present in the sample.
- Samples should be processed in the correct containment level conditions.
- Dispose of all material in accordance with local regulations.
- Any serious incident that occurs in relation to the device should be reported to the manufacturer and the competent authority of the member state in which the incident occurred.

TEST PROCEDURE

Thin blood films:

1. Prepare a thin smear on a clean glass slide and allow to air dry.
2. Fix in methanol for 1 minute and allow to dry.
3. Flood the slide with 1ml of diluted Field's Stain B (1 part stain, 4 parts buffered water pH 7.2).
4. Immediately add 1ml of undiluted Field's Stain A, mix well and leave to stain for 1 minute.
5. Rinse well with water. Drain the slide vertically and allow to air dry.

Thick blood films:

1. Prepare a thick smear on a clean glass slide and allow to air dry. Do not fix in methanol.
2. Dip the slide into undiluted Field's Stain A for 3 seconds. Remove and drain off excess.
3. Dip the slide into distilled water for 3 seconds and agitate. Remove and drain off excess.
4. Dip the slide into undiluted Field's Stain B for 3 seconds. Remove and drain off excess.
5. Wash gently in clean water until no more stain washes out of the smear.
6. Drain the slide vertically and allow to air dry.
7. Examine using a microscope.

QUALITY CONTROL PROCEDURE

Internal quality control of the Field's Stains must be performed regularly on known reference material.

Recommended Quality Control:
Positive control – a proven positive
Negative control – a proven negative

INTERPRETATION OF RESULTS

	Thin films	Thick films
Parasite chromatin	Dark red	
Parasite cytoplasm	Blue	Blue-mauve
Schüffner's/James's dots	Red	Pale red
Malaria pigment	Brown-black	Yellow-brown/black
Reticulocytes	Grey-blue	Blue-grey
Nuclei of neutrophils	Dark purple	
Cytoplasm of mononuclear cells	Blue-grey	
Granules of eosinophils	Red	
Nuclei of small lymphocytes	-	Dark purple
Maurer's dots (clefts)	Red-mauve	-
Red cells	Grey to mauve-pink	-

LIMITATIONS OF THE PROCEDURE

- Only experienced personnel should carry out the interpretation of stained slides.
- Read prepared slides as soon as possible after staining. Failure to do so may affect the results.
- Caution should be exercised when examining thick blood films as clotted cells and blood platelets may be confused with malarial parasites.

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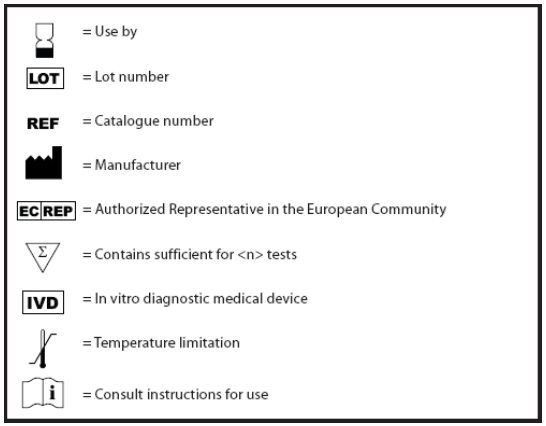

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HAZARDS IDENTIFICATION

Please refer to Safety Data sheets for full text for all hazard and precautionary statements.

	PL.7123 **PL.7124** **PL.7125** **PL.7126**	**EUH210** **This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP].** **Not classified (SI 2020/1567 as amended).**

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