

# ABX Minipack LMG

REF	0602050
REAGENT 1	0.5 L
REAGENT 2	0.3 L
REAGENT 3	3.4 L



**HORIBA ABX SAS**  
 Parc Euromédecine - Rue du Caducée  
 B.P. 7290  
 34184 MONTPELLIER Cedex 4  
 FRANCE

- ABX Micros
- ABX Micros 60
- ABX Micros ES60
- Micros Care ST

## Hematology Devices (for *in vitro* diagnostic use)

### Intended Use <sup>a</sup>

**ABX Minipack LMG** is constituted of 3 reagents (**R1**, **R2**, **R3**) and a waste container intended for *in vitro* diagnostic use on HORIBA Medical blood cell counters.

- **R1** is an enzymatic solution with proteolytic action for the cleaning of blood cell counters.
- **R2** is a lysing solution for lysing erythrocytes (RBC) for leucocytes (WBC) counting and differentiation and for hemoglobin determination.
- **R3** is a buffered isotonic solution designed for the determination of blood cells counting, and the measurement of hematocrit.

**ABX Minipack LMG** can be used for self-testing on Micros Care ST only.

### Warnings and Precautions

- It is the user's responsibility to verify that this document is applicable to the product use.
- **ABX Minipack LMG** is classified as hazardous in compliance with regulations 67/548/EEC - 1999/45/EC.
- **Warning:**  
**R52:** harmful to aquatic organisms.
- **Warning:** due to potassium cyanide presence, avoid contact with acid and aqueous acid environment: extremely toxic cyanide acid vapour can be formed.
- Users are advised to wear approved protective clothing when handling chemical products: lab coat, gloves, and eye protection.

- Observe the standard laboratory precautions for use and follow national or local health and safety guidelines.
- Please refer to the Material Safety Data Sheet (MSDS) associated with **ABX Minipack LMG**.
- This reagent is destined for use with HORIBA Medical blood cell counters specified above. HORIBA Medical cannot guarantee the correct functioning of this reagent with instruments other than those specified above, or with instruments not manufactured by HORIBA Medical.

### Waste Management

Please refer to local legal requirements. This reagent contains less than 0.1% of sodium azide as a preservative. Sodium azide may react with lead and copper to form explosive metal azides.

### Microbiological State

Not applicable.

### Description and Composition <sup>b</sup>

#### Description:

- R1:** Limpid and colourless to light yellowish aqueous solution.
- R2:** Limpid and colourless aqueous solution.
- R3:** Limpid and colourless aqueous solution.

<sup>a</sup> Modification: new reagent leaflet form.

<sup>b</sup> Modification: modification of reagent.

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## Composition:

### R1

Organic buffer	< 5%
Proteolytic enzyme	< 1%
Preservative	< 1%

### R2

Lysing agent	< 0.1%
Detergent	< 5%

### R3

Organic buffer	< 5%
Preservative	< 0.1%

## Storage and Shelf Life after First Opening

- **Storage condition:** 18-25°C (65-77°F).  
Do not freeze.
- **Open stability:** 1 month maximum at 18-25°C (65-77°F) after opening.
- **Expiration date:** refer to "expiration date" reagent packaging label.

## Materials Required but not Provided

- Automated hematology analyzer.
- Calibrator: **ABX Minocal**.
- Control: refer to the user manual for the specific control used with your instrument.
- Standard laboratory equipment.

## Specimen

### Sample collection:

All blood samples should be collected using proper technique! Consider all specimens, reagents, calibrators, controls, etc. that contain human specimen extracts as potentially infectious and follow biosafety practices (1, 2). When collecting blood specimens, venous blood is recommended, but arterial blood may also be used in extreme cases. Blood collection must be placed in vacuum or atmospheric collection tubes (3, 4). The sample collection tube has to be filled to the exact quantity of blood indicated on the tube itself to avoid variations in the results.

### Recommended anti-coagulant:

The recommended anticoagulant is K<sub>3</sub>-EDTA with the proper proportion of blood to anticoagulant as specified by the tube manufacturer. K<sub>2</sub>-EDTA is an acceptable alternative, as long as the sample collection is made in normal conditions. Otherwise, blood clots may be possible.

### Blood sample stability:

Sample stability at low temperature: Ten "normal" and ten "pathological" specimens were collected from the routine laboratory workload and stored at 4°C. Sample stability was assessed over a period of 72 hours. The results (mean of ten tests) conclude with a relative sample stability claim of:

- 48 hours for the CBC parameters
- 24 hours for the DIFF parameters

Sample stability at room temperature: Ten "normal" and ten "pathological" specimens were collected from the routine laboratory workload and stored at room temperature (25°C). Sample stability was assessed over a period of 72 hours. The results (mean of ten tests) conclude with a relative sample stability claim of:

- 48 hours for the CBC parameters
- 24 hours for the DIFF parameters

### Microsampling:

Instrument sampling mode enables the user to work with microsamples for pediatrics and geriatrics (refer to the instrument user manual for the minimum blood sample volume). These microsamples can only be used in the following conditions:

- The tube must always be held in vertical position.
- Blood mixing must be obtained by slight tapping on the tube. Do not rotate the tube for mixing, otherwise the blood will be spread on the tube side, and the minimum required level will be lost.

### Mixing:

Blood samples must be gently and thoroughly mixed just before sampling. This ensures a homogeneous mixture for measurement.

## Procedure

These reagents are ready to use.

1. Open the door of the reagent compartment.

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2. If necessary, remove the empty **ABX Minipack LMG** from the reagent compartment.
3. Remove the three reagent output protections from the new pack.
4. Refer to the user manual to identify **ABX Minipack LMG** using the barcode reader or manually.
5. Install **ABX Minipack LMG** into the reagent compartment of the instrument.
6. Gently push it down in order to plug it correctly into the male connectors.
7. Cut the seal of the waste input protection.
8. Remove the waste input protection.
9. Plug the free male connector onto the pack waste connector input (upper valve).

Follow instructions displayed on your instrument software.

Refer to the instrument user manual for detailed analysis and control procedures.

## Methodology

- **ABX Minipack LMG, R3** is a saline and buffered electrolytic solution which allows the dilution and the preparation of blood sample for analysis. The presence of non-ionic surfactant ensures an optimal dynamic of flow in the whole hydraulic systems of the instrument. The electrolytic action supports the counting of the cells by impedance. This reagent differentiates also morphological populations of leucocytes (WBC). This reagent is also used in the rinsing and cleaning cycles of the hydraulic systems of the instrument.
- **ABX Minipack LMG, R2** breaks down the erythrocyte (RBC) cell membrane and releases the hemoglobin within the cell. The hemoglobin, released by the lysing reagent, combines with the potassium cyanide from the lysing reagent to form a chromogenous cyanmethemoglobin compound. This compound is measured through the optical part of the flowcell by spectrophotometry at a wavelength of 550 nm. Detergent present in the solution differentiates also morphological populations of leucocytes (WBC).
- **ABX Minipack LMG, R1**: the combined action of a proteolytic enzyme with a detergent eliminates protein residues and prevents the hydraulic tubes from clogging and / or blocking. It is used also to break down the protein build-ups in the counting chambers and apertures.

## Performance Characteristics and Limitations of the Method

Refer to the user manual for the performance characteristics of the instrument and the limitations of the analyses on instrument parameters.

## Calculation and Interpretation of Analytical Results

Refer to the instrument user manual for calculation and interpretation of analytical results.

## Changes in the Procedure and in the Performance

### Packaging spoiling

In case of protective packaging spoiling, do not use **ABX Minipack LMG** if the damages might have an effect on the product performance.

### Signs of deterioration

In the event of any signs of physical or chemical deterioration (turbidity, change in colour etc.) **ABX Minipack LMG** should be replaced.

### Temperature limits

Do not use **ABX Minipack LMG** if it has been frozen or kept at excessive heat.

Before using **ABX Minipack LMG**, make sure it has reached the operating temperature conditions as described in the instrument user manual.

## Internal Quality Control

HORIBA Medical control bloods must be used to periodically assess the integrity of the reagents and the instrument in the specified ranges.

HORIBA Medical offers an Online Interlaboratory Comparison Program (QCP) which provides internet access to:

- Submit Internal Quality Control results online.
- Monitor analytical performances and compare directly with hundreds of laboratories worldwide.
- Obtain real time peer group statistical reports from QCP

More informations are available at:

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<http://qcp.horiba-abx.com>

## Traceability of Calibrators and Control Materials

Not applicable.

## Reference Intervals

Not applicable.

## Reference

1. Occupational Safety and Health Standards: bloodborne pathogens. (29 CFR 1910. 1030). Federal Register July 1, 1998; **6**: 267-280.
2. Protection of Laboratory Workers From Occupationally Acquired Infections; Approved Guideline - Third Edition. CLSI (NCCLS), document M29-A3 (2005) **25** (10).
3. Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture; Approved Standard - Sixth Edition. CLSI (NCCLS), document H3-A6 (2007) **27** (26).
4. Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard - Sixth Edition. CLSI (NCCLS), document H4-A6 (2008) **28** (25).